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Technology Insertion (TI)/Industrial Process Improvement (IPI) Data Base Documentation Book Volume, for SA-ALC/MANTPFA (Unified Fuel Control (UFC's) Book 1 of 2 This document contains detailed information about layouts equipment and processes for this RCC (Resource Control Center). It also includes Simulation Modeling info for this RCC. See also Book 2, AD-A 239 299.

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OFFICE	NAME	DATE
AFLC/EN1	Pat McWilliams	24 Aug 9
AFLC/PA	Mike Connell	24 Aug 9

1.0

OVERVIEW

ENGINEERING NOTES

EMPLOYEE RANDY HARRIS DATE 6/18/90 - 6/22/90 PAGE NO. 1 OF 2

RCC MATPFA SUBJECT UFC FLOW DIAGRAM, MISC INFO

PRELIMINARY OBSERVATIONS AND COMMENTS ON THE UFC PROCESS FLOW AND WIP PROCEDURES

THERE ARE TWO REASONS FOR A UFC TO BE SENT TO BUILD 375 - (1) A FAULT DETECTED IN THE FIELD (APPROXIMATELY 92% OF THE TIME), OR (2) A SCHEDULED "CHECK-UP" FOR THE UFC AFTER A DETERMINED NUMBER OF HOURS IN OPERATION. IF THE UFC MEETS SPECIAL INVESTIGATION TEAM (SIT) CRITERIA, THE MR TEAM WILL PROVIDE THE APPROPRIATE REPAIR INSTRUCTIONS. OTHERWISE, THE ON-CONDITION MAINTENANCE (OCM) TEAM WILL DETERMINE WHAT IS REQUIRED IN TERMS OF REPAIR OPERATIONS FOR THAT PARTICULAR UFC.

THE UFC CONSISTS OF THREE SECTIONS - THE DISTRIBUTION BODY (DB), THE GAS GENERATOR (GG), AND THE AUGMENTOR COMPUTER (AC). THE DISTRIBUTION BODY HAS 29 DIFFERENT TASKS ASSOCIATED WITH IT WHICH COULD BE PERFORMED IN THE REPAIR PROCESS, THE GAS GENERATOR HAS 56 DIFFERENT TASKS ASSOCIATED WITH IT, AND THE AUGMENTOR COMPUTER HAS 32 TASKS ASSOCIATED WITH IT. ALTHOUGH THE CURRENT TRACKER DATA IS SOMEWHAT QUESTIONABLE IN ITS CURRENT PROTOTYPE STAGE, CERTAIN ELEMENTS OF THE DATA CAN BE USEFUL FOR INITIAL DEVELOPMENT OF THE UOOS MODEL. ONCE AN INITIAL RUN OF THE MODEL IS COMPLETED, THE OUTPUT CAN BE STUDIED TO DETERMINE IF CERTAIN CRITERIA HAS BEEN SATISFIED. WHEN TRACKER INFORMATION BECOMES REASONABLY CONSISTENT AND RELIABLE, THE DATA CAN BE INPUTTED TO THE MODEL WHICH SHOULD GENERATE A MORE ACCURATE REPRESENTATION OF SHOP FLOOR CONDITIONS.

DUE TO THE VARIABLE NATURE OF THE UFC REPAIR PROCESS, THERE IS ONLY A GENERAL FLOW DIAGRAM OF A "TYPICAL" UFC MOVING THROUGH THE OCM PROCESS. EACH UFC CAN LITERALLY HAVE ITS OWN CRITICAL PATH DEPENDING ON WHAT REPAIR/SCHEDULED MAINTENANCE IS REQUIRED. IF DEMATING OF THE SECTIONS IS REQUIRED, SIGNIFICANT WAITING DELAYS CAN OCCUR IF MUCH WORK IS REQUIRED ON THE GAS GENERATOR, AUGMENTOR COMPUTER, OR DISTRIBUTION BODY SECTION. ANOTHER SOURCE OF DELAY CAN BE TEST STAND AVAILABILITY. THE 5000 TEST STANDS ARE USED FOR SEVERAL TASKS AND CAN CAUSE A

DDB SECTION CODE #1, #3, #4 DDB PAGE NO. 010001

ENGINEERING NOTES

EMPLOYEE RANDY HARRIS DATE 6/18/90 - 6/22/90 PAGE NO. 2 OF 2

RCC MATFA SUBJECT

PARTS TO WAIT IN QUEUE AT THE BEGINNING OF THE PROCESS FLOW IF NEARLY COMPLETED UFCs ARE BEING TESTED BEFORE FINAL SELLOFF, AN EXAMINATION OF SCHEDULING PROCEDURES OR CONSIDERATIONS OF ALTERNATIVE ROUTING COULD PROVIDE SOLUTIONS TO THE INITIAL PROCESS FLOW DELAYS.

THE GAS GENERATOR STATUS IS CRITICAL IN TERMS OF DELAY TIME THE ASI TEST, THE ASI TEST WILL NOT BE REPERFORMED UNTIL THE WORK REQUIRED ON THE GAS GENERATOR HAS BEEN COMPLETED. TWO REASONS EXIST FOR CONDITION: (1) - THE SETUP ON THE TEST STAND (50002) IS GREATLY FACILITATED IF THE AC-LB SECTION AND THE 66 SECTION CAN BE INSTALLED SIMULTANEOUSLY ON THE STAND, AND (2) THE AVAILABILITY OF TEST-STAND OPERATORS CAUSES A POTENTIAL TIME DELAY. THE UTILIZATION PERCENTAGES COMPUTED FROM THE USAGE REPORT SHOULD PROVIDE INDICATIONS AS TO WHETHER ALTERNATIVE ROUTING PROCEDURES MIGHT BE FEASIBLE TO IMPROVE THROUGHPUT AND DECREASE THE CURRENT WIP LEVELS. THE 50002 AND 50005 USAGE AND QUEUEING LEVELS SHOULD INDICATE POTENTIAL AREAS OF CHANGE.

FURTHER EXAMINATION OF OPERATION DESCRIPTIONS AND METHODS, ESTIMATED OPERATION TIMES, NUMBERS OF CYCLES AN "AVERAGE" UFC MAY GO THROUGH IN PARTICULAR SECTIONS OF THE PROCESS FLOW, AND PLANNING AND SCHEDULING FUNCTIONS WILL BE PERFORMED OVER THE NEXT FEW WEEKS. FURTHER COMPILED SHOP FLOOR DATA AND PICKER MANIPULATION OF THE TRACKER DATA BASE SHOULD FACILITATE THE DATA COLLECTION PROCESS AND FORMULATION OF THE UDOS FLAT FILES.

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010062

ENGINEERING NOTES

EMPLOYEE RANDY HARRIS DATE 4/25/90 - 4/29/90 PAGE NO. 1

RCC MATPFA SUBJECT UFC PROCESS FLOW

UFC PROCESSES

A THOROUGH ANALYSIS WAS PERFORMED IN THE AREA C, B, AND D SECTIONS OF THE UFC OVERHAUL AREA. DISCUSSION AND CONFIRMATION OF THE GENERAL UFC PROCESS FLOW DIAGRAM AND ASSOCIATED OPERATION TIMES AND OCCURRENCE FACTORS WAS OBTAINED FOR MOST STEPS INDICATED. SHOP FLOOR ESTIMATES TENDED TO SUPPORT THE OCTOBER-NOVEMBER DATA OBTAINED FOR THE PROCESS, IMPROVEMENTS WHICH HAVE BEEN IMPLEMENTED IN THE FLOW (ESPECIALLY TEST STAND OPERATIONS) WERE EXPRESSED BY SHOP PERSONNEL AND CHANGES TO THE RELEVANT OPERATIONS WERE INPUTTED. BEFORE THE ACTUAL FLAT FILES ARE SUBMITTED FOR AN INITIAL MODEL RUN, SEVERAL KEY UFC PERSONNEL WILL BE QUERIED FOR A TENTATIVE VALIDITY OF THE DATA.

THE PROBABILITIES FOR DECISION NODES IN THE PROCESS FLOW AND THEIR ACCURACY WILL BE CRITICAL FOR MODEL SUCCESS. THE PRIMARY SOURCES FOR THIS INFORMATION WILL BE (1) OCM TEAM DATA, WHICH IS CURRENTLY BEING COMPILED TO OBTAIN PRECISE PROBABILITIES; (2) THE OCTOBER-NOVEMBER DATA WHICH IS STILL CONSIDERED VALID; AND (3) SHOP FLOOR ESTIMATES AND DATA EXTRACTED FROM TRACKER.

WITH REGARD TO CYCLE OCCURRENCES, THE OCM TEAM WILL BE ACCUMULATING DATA TO ESTABLISH ACCURATE FIGURES. THE INFORMATION WHICH THE OCM TEAM WILL BE COLLECTING CONCERNS REQUIRED REMATES, REQUIRED 66 REPAIRS, AC/DC REPAIRS, REQUIRED DOUBLE-REMATING, NUMBER OF REMATE CYCLES, AND THE NUMBER OF DOUBLE-REMATE CYCLES.

THE DATA COLLECTION PROCESS IS PROCEEDING WITH EQUIPMENT AND MANPOWER DATA BEING COLLECTED ALONG WITH F-15 AND F-16 ITEM PROFILE INFORMATION. THE OPERATION PROFILE INFORMATION IS BEING ASSIMILATED THRU VARIOUS RESOURCES WITH THE INTENT OF DEVELOPING A WORKING MODEL TO REPRESENT A SPECIFIED PERIOD OF PRODUCTION. ALTHOUGH THE MODEL WILL INITIALLY NOT CONTAIN "PINPOINT ACCURATE" DATA, THE RESULTS SHOULD AT LEAST BE REASONABLY ACCURATE, ESTABLISHING A FOUNDATIONAL BASIS FOR FURTHER DEVELOPMENT.

AS DISCUSSED IN PREVIOUS NOTES, IT STILL APPEARS AS THOUGH THE WORK-IN-PROCESS AND THE TEST STAND OPERATIONS WILL BE THE MAIN POTENTIAL SOURCES OF PROCESS SAVINGS.

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010003

ENGINEERING NOTES

EMPLOYEE Phillip Parker DATE 6/18/90 PAGE NO. 1

RCC MATPFA SUBJECT Project start-up

Project start-up was officially 6/18/90 for SA-ALC Industrial Processes Program. Since this first week will mainly entail setting up the office and in-processing people, I will simply notate significant events or discussions by date in the next few pages. When actual RCC evaluation occurs I will begin more thorough record keeping.

6/18/90 -

At 1:00 p.m. this afternoon we had our initial in-briefing with the ALC MA and support personnel. This meeting was co-chaired by Pete Garza, the ALC contact point, and Greg Gardner, the MBMSC site leader. The meeting was of a general nature, serving as a "get acquainted" meeting, and reviewing the program's objectives and strategies. There were few questions generated from this meeting. Col. Gagnon (sp) expressed some concern on the use of general I.E. skills to perform such widely different task orders. Greg pointed out that several specialists were scheduled to be brought in throughout the project, which should certainly increase the viability of our suggestions. He also expressed concern that his people be trained in the IPI methodology, so that they could carry on with the process after these Task orders e.g. The meeting ended without further discussion or any action items identified.

One point of order: I feel that thanks are due to Susan Schattle, who has been instrumental in helping us set up our office, as well as assisting us as an interface between ALC personnel and the various support functions we must deal with. I believe Susan will also be an excellent source of information about SA-ALC divisions and broad categories of ALC information. This should prove of great

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910004

benefit. I also feel that she would be the most natural point of contact for training ALL personnel in IPI methodology or specific task (such as preprocessor, data formats, data collection technique, etc.).

6/19/90 -

we met with Earl Carter this A.m. on the Tracker System, which is used to collect process data at the floor level. This system is a prototype at this time, and is only being used on first shift. After the "bugs" are worked out, the system will be introduced the the other two shifts. The discussion with Earl was very general, and mostly was of an introductory nature. The most significant action item from this meeting was to alert Earl that Scott Vroman would like to meet with him on Friday, 6/22/90. Earl agreed to prepare certain printouts for Scott to review on Friday.

6/20/90 -

we toured the shop with Merrilynne Henderson, the UFC production engineer. I was impressed with the changes in this RCC since my last visit in January. They have corrected many of the problems which were apparent at that time, and have increased their production rates significantly. I am afraid that many of their remaining problems are going to be more difficult to overcome, as many of these appear to be linked to administrative procedures and practices which have been long entrenched in the AFLC and this RCC in particular. Many of these practices are probably responses to conditions which existed in previous years, but are no longer valid. Luckily, this RCC appears to be blessed with

ENGINEERING NOTES

EMPLOYEE P. Parker DATE 6/20/90 PAGE NO. 3

RCC MATPFA SUBJECT Project start-up

a progressive administrative and management structure, as well as Ms. Henderson, who strikes me as extremely competent and informed.

One significant problem which Ms. Henderson feels this shop has is over induction of end items, or high WIP. This problem is further complicated by the fact that there is not necessarily a set path which any one UFC will follow through the repair process, and the UFC or its subcomponents could be scattered throughout the shop. Since there are many non-designated waiting or storage points which these items could be found, it becomes a logistical problem in determining where to find a particular UFC or its subcomponents. This will naturally make it more difficult to implement the Tracker System. These areas of concern with be reviewed by the IPI team more closely at a future date.

I must say that this RCC is doing things which I must highly praise. Many of the procedures and management techniques they are experimenting with appear to be unique to this shop and SA-ALC itself. While there are bound to be setbacks with any such progressive system, I believe it is this spirit of wanting to change ineffective practices of the past which is the only true means of producing efficient, lasting process improvements. The administrati of this RCC is to be commended, in my opinion, for being willing to take what must be a <u>high risk</u> approach. (High risk here denoting the willingness to make mistakes, and thereby learn from them, in an environment not well known to tolerate mistakes of any kind. As we all know, administrators who do not tolerate mistakes of any kind can easily paralyze their engineering and production personnel, who are to afraid of trying anything new).

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010006

ENGINEERING NOTES

EMPLOYEE C. Parker DATE 6/21/90 PAGE NO. 4

RCC MATPFA SUBJECT Project start-up

6/21/90 -

Most of today has been spent gathering general information about UFC processes from Ms. Henderson, as well as setting up our office and computer equipment. I am compiling my rough notes into a legible whole, so that they can be included in Monday's notes, 6/25/90. While I do not like doing my engineering notes this way, this first week has been so hectic that I have had little choice.

6/22/90 -

We had a meeting with Mr. Sosa, who is the production manager for this area. He introduced the IPI personnel to his first and second level supervisors, and we gave a short briefing on the nature and objectives of this program. There were few questions, and we adjourned the meeting. Ms. Henderson agreed to provide us with an organizational chart for this area as soon as possible.

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010007

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EMPLOYEE [illegible] DATE [illegible] PAGE NO. [illegible] 11

RCC _____ SUBJECT _____

1 pm - Mtg w/ USAF & GS folks

Pete Garza briefed as to our total & objectives
- Req. support from everyone - maint. on up through sys C

Greg Gardner gave MDC pitch / explain how we'll get to 2nd result

Only a few questions put to us - feel that there are probably more, but due to heat (NC A/C) everyone was in a rush?

Too bad - we need all concerns on the table right now. Hidden agendas will not help the program

---

making plans to do tours and conduct interviews

need to tap into outside network for access into civilian companies during the next week

call Daytona for trip sheet on contacts for:

Continental
NWA
United
Delta
USAir

make contact w/ department heads for
Planning, Scheduling, Production, QA,
Training, Inventory Control, Training

DDB SECTION CODE _____ DDB PAGE NO. _____

010008

ENGINEERING NOTES

EMPLOYEE LKB DATE 1/7 PAGE NO. 1/2

RCC SUBJECT

Planning – according to MH

Terry Chican – UFC –
- does T.O. verification / Test Stand
- works w/ software people
- on approval committee
- a real asset to program

↓ have way too many test stands

Charles Bradley / Joe Zamora
- work directly for Bob Wojtek
- generic planners
- Keeps track of special tools
- Keeps bills of materials accurate
- in chrg of labor standards & wk control docum.
- employee suggestion experts
  ie. suggestions go direct to office w/ no technical expertise, then routed to special areas for validation & comments
- meets w/ Bendix people on problems w/ supplies & parts
- deal w/ T.O. waivers (Form 103s)
- handles special routing of parts
  ie. parts awaiting info on projects or parts contributing to data collection for acft accident or incident

OCM team consists of: Planning, QA & Production

173 test stands are "automatable" but manual

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010009

ENGINEERING NOTES

EMPLOYEE _____ DATE 1/7/1 PAGE NO. 2/2

RCC _____ SUBJECT _____

M.M.E – in charge of rewriting T.O.s
– have 1 engineer to validate processes

Scheduling according to MH

in general, S. keeps track of in/out work and of AWP (missing parts & tracking serial #s)
also responsible for MLC (Parts Store/inventory)
↳ Material Inventory Control

Manages FORKLIFTS & TRUCK DRIVERS

TRACKS BACK ORDERS, INDUCTIONS & SALES

(Sales are completed jobs)

CEMS – Comprehensive Engine Monitoring System

Section Chief (GS12 slot) is vacant

Mary Banda – currently running scheduling, supervises about 12 people directly

UFC control #s and TCTOs.

Henry – in/out logging scheduling

Manual log books/card files and are not cross-referenced using computer print-outs from somewhere – format is for DS and won't give S. what they need

spend alot of time at mtgs (preparation for, being at and debriefing).

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010010

ENGINEERING NOTES

EMPLOYEE LKB DATE 1/2 PAGE NO. 1/3

RCC SUBJECT

Interview w/ MARY BANDA - Scheduling

attends meetings - quarterly pre-negotiating of work orders

. the quarterly schedule gets broken down into each month - divide assets by 3

Temporary (unscheduled) job orders make up 20% (approx) of the work load.

UFC line - head scheduler w/ 2 assistants

Renogtiation and drive adjustment record - worked when parts don't come in and jobs are delayed.

RUSH ORDERS - MICAP (Mission Impact ___ ___ ___)

Engine department - sends work orders on quarterly basis (but by month)

MISTR workload - work drive has a fairly accurate estimates for most quarters (comes from PS/SD)

They let MM know about parts constraints every 2 wks

They do have problems w/ T56 work stands - they're old, can't get repair parts - but awaiting 2 new test stands in October.

The NOZZLE WORKLOAD IS A PROBLEM AREA - goes a bit slow

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010011

ENGINEERING NOTES

EMPLOYEE LKB DATE 172 PAGE NO. 2/3

RCC SUBJECT

The procedures which govern scheduling usually work well. If not, suggestions can be sent in for rewrite to DS.
— Doesn't recall last time this has happened.

Computer - used primarily for
Material Support
Scheduling Support
Workloading

demonstrated a couple of items one can call up on computer. Most of the schedulers use their manual system because they are more comfortable w/ it.

Data is input every day — there are several print-outs that can be pulled up regularly.

"Stock number Deep Look" appeared to be a really good pull-up report, but I'm not sure it's used to its full advantage.

There's also a pc that has not been used yet because they're waiting for "someone" in the sys to come train them.

It's hard to tell how much this office actually knows about the whole computer program. Several applications could not be accessed, but no one knew why, who used that particular application, etc.

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010012

ENGINEERING NOTES

EMPLOYEE LCB DATE 1-7-? PAGE NO. 3|3

RCC _____ SUBJECT _____

Went back to Inventory Section (MIC) to talk w/ these folks

They're using computer extensively, but they have back-up computer print-outs for emergencies (computer down)

Key in parts used from mechanic's request form — ~~Groups of~~ - each person in the key punch area is assigned to a certain group of data to input. Some seemed busy; some seemed bored.

— Pending items are filed in their desks —

As far as inventory goes, even "open bin" items are controlled also

They ~~are~~ have started using "profiled" mechanics to pre-package high-usage items into kits, as opposed to pulling items separately, as a time saver.

Occassionally have problems getting ~~these~~ parts due to warehouse freezes

* "Recommended" stock requirements not always met

They appear to be getting the job done, however, and they are creative and flexible.

DDB SECTION CODE _____ DDB PAGE NO. _____

ENGINEERING NOTES

EMPLOYEE LKB DATE 1/3 PAGE NO. 1/1

RCC _____ SUBJECT _____

9:30 A - Production Dept Mtg

Meet all supervisors for day shift, plus Mr. Adan Soza, Production Chief.

Look fwd to mtg w/ Frank Mann - need to talk about training requirements and his overview of the OCM team in general

Also want to talk w/ Mark Carroll, who is in charge of distribution, & modification and overhaul of test equipment.

- have heard several conflicting stories about test stands, as to whether or not they work properly - how often they're down, etc. -

---

working w/ team on incoming data - very little info to make comparisons with yet.

Set up appointment w/ Planning and also Frank Mann for Monday, if possible.

Am starting to make phone calls to set up appointments w/ various airlines. Data collection will start Tuesday or Wednesday at Houston w/ Continental.

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010014

ENGINEERING NOTES

EMPLOYEE LKB DATE 1/5 PAGE NO.

RCC SUBJECT

made contact w/ several Houston people and it's set up for Tuesday or Wednesday w/ a call back after I find out which day I can fly on Monday.

I'll visit the planning and maint control sections in the AM and go out to the maint hangars in the PM.

- get w/ Greg to confirm after date is set.

- try to get info on:

training programs
scheduling programs
computer assets
maint costs or estimates
aging acft problems
eng overhaul info
tracking systems

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ENGINEERING NOTES

EMPLOYEE LKB DATE 1/26 PAGE NO. 1/2

RCC _____ SUBJECT _____

Travel agency to set up trip ✓

CALL CONTACTS TO CONFIRM ✓

CONFIRM w/ Greg ✓

Noreen and Ron arriving – talk w/ Noreen about computer input (how to on Apple)

(look into getting an IBM laptop w/ word perfect for ease of compiling notes)

Strategy meeting – plans for rest of week

I depart on Friday for 3 weeks back to Germany. List follow up items needed to be accomplished while off site.

Frank Mann came in to tell me he was tied up in meetings all day and was going out of town on Tuesday till Wed.

Give me contact for temporary data collection and we'll have to talk upon my return in end of July. See Marca Lopez, also ext. 4491

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ENGINEERING NOTES 176

EMPLOYEE Baumgardner DATE 25 June 90 PAGE NO. 2/2

RCC _____ SUBJECT UFC

In talking w/ the IPI team members, I'm trying to assess the data that has already been collected...

Very curious about the unscheduled ma. rt. portion of workload. Will get comparisons from civilian ops. to see what percentage of their MX comes from unscheduled work, as well as the impact & how mngmt deals w/ it.

WAITING ON parts — the "system" won't release parts sometimes to the "floor store". Is this a budget problem, a red-tape problem or actual availability problem?

"system" - warehouse across base - this is local, but ordered parts from "floor store" can sometimes take a long time to to get to MX.

Is it reasonable to accept that UFCs can be off the line (AF fieldsites) for months at a time? What kind of inventory are we talking? How many spares are in the system? Do acft sit on the ground waiting for required UFCs to be returned? Or does the AF have an abundance of UFCs in the sys so that the process can work at its own pace?

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010017

ENGINEERING NOTES

EMPLOYEE LKB DATE 1/7 PAGE NO. 1/4

RCC _____ SUBJECT _____

Met w/ Maint Control / Continental Airlines / Houston (GATEWAY offices)

Responsibilities of MAT control:

- Monitor and follow up on all delays, but specifically MX delays
- Also started tracking repeat write-ups in the last year or so

Daily conference calls w/ other MX hubs
Cleveland
Newark
Denver
Houston

- They together research problems, including history of problems
- Help research on Placards (when a deviation to MEL occurs)
  (make sure delays are coded properly)
- according to MAT control, each maint hub handles all types of acft, except engines - these are overhauled in LA by a vendor.
- Certain office in MAT control handles corrections on logbook entries,
- Records office tracks jobs, how long it takes for job to be completed, whether parts were available or had to be transferred, and monitors write-ups and "fix" entries for accuracy. (When a questionable entry appears, they send it down to MAT control)

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010018

ENGINEERING NOTES

EMPLOYEE UCS DATE 1/7 PAGE NO. 2/4

RCC _____ SUBJECT _____

Planning and Records work together to do all plans & scheduling work. MAT control, maint hangar supervisors and Stores (parts/invent) sit in on weekly planning sessions.

Planning office and a mx budget office incorporated. Houston office runs all the mx hubs – uses conference calls to bring in the supervisors to the weekly mtgs.

Most of the A & B checks are done in conjunction w/ RONs, where unscheduled maint is also accomplished. Unscheduled mx takes up about 5-7 % of their regular work.

MAT control has a shift change log, which is in compliance w/ FAR pt 121.

Deferred maint (from Placards) usually cleared in 3 days, as Planning will fit in that work w/ the scheduled mx.

They use SEPTRE.II as the maintenance computer system. They have a second system which is used by non-maintenance departments, so MAT control uses both systems to remain integrated w/ the entire system. Second sys is for flight scheduling and other departments ("reservations" works on this)

SEPTRE ties all the areas of the operations together. Also serves as a time clock and a library reference and work cards.

DDB SECTION CODE _____ DDB PAGE NO. _____

Attachment 1 follows

010019

MAY WE HELP YOU
LIGHT-PEN DESIRED JOB-POSITION OR TASK

JOB CLASSIFICATIONS

1. LINE/HANGER MECHANIC	2. SHOP MECHANIC
3. MAINT. LEADS/SUPERVISORS	4. MAINTENANCE CONTROL
5. ENGINE/COMPONENT PLANNERS	6. A/C PLANNERS
7. RECORDS - MAINTAIN	8. RECORDS - DISPLAY
9. INSPECTORS/Q.C. - HANGER	10. INSPECTORS/Q.C. - SHOP
11. ENGINEERING	12. RELIABILITY
13. FLIGHT CONTROL	14. MATERIALS ANALYST
15. TECHNICAL SERVICES	16. LEAD OR STOCK CLERK
17. PURCHASING	18. MANAGER
19. CATALOGER	

TASKS

1. INSPECTIONS - DISPLAY/SIGNOFF	2. ENGR.MODIF. - DISPLAY/SIGNOFF
3. ENGR.MODIF. - MAINTAIN	4. WORK CONTROL
5. PARTS/SUPPLY ORDERING	6. A/C TIMES & FORECAST
7. COMPONENT MAINTENANCE	8. A/C MAINTENANCE
9. EMPLOYEE & LABOR	10. VENDORS
11. P/N & PARTS REQUEST MAINT.	12. PART ROUTING & TRACKING
13. SERIALIZED RECORD MAINT.	

SEPTRE menu

010030

Attachment 1

ENGINEERING NOTES

EMPLOYEE LEB DATE 1/7 PAGE NO. 3/4

RCC _____ SUBJECT _____

Approx 4.4% of Acft fleet down for major maint (overhauls & mods) at any given time. when it gets ~~over~~ 5%, "red lights flash" and they put people on overtime!

Regular shifts are 3 full shifts, 5 days a week, no weekends, no overtime!

Maintenance Hangar / managers -

Currently AVIAL does engine overhauls in L.A. for large acft (747s, etc)

Small acft (DC-9s & MD 80s) have engines overhauled at Houston's Intercontinental MX hangars

Hobby Airport handles acft MX - specifically D checks - on MD80s & DC-9s.

QA reports directly to VP of Maint't ops, not the Dir of Maint Control

They use a Reliability Centered Maintenance program and they are reviewing regs. on a constant basis.

For example, they are going back to Block time for major checks, as opposed to the phase system which became popular 15 years ago.

DDB SECTION CODE _____ DDB PAGE NO. _____

010021

ENGINEERING NOTES

EMPLOYEE LKB DATE 1-7 PAGE NO. 4/4

RCC SUBJECT

- With a D check, they usually occur every 7-8 years (depending on acft btw 20,000 & 25,000 hrs) and the acft will be down for 10-15 days, (also depending on acft size)

- The reason phased maint is becoming a problem - too rushed for the mx people, and result - lack of quality.

- MD-80 & DC-9 checks (major overhaul) done in Houston @ Hobby

- Most other mx hubs specialize in atleast one airframe, although some can do up to B and partial C checks on a variety of acft.

- Small engines overhauled local, but large are done by various vendors.

- SID Program - just coming into the threshold now

  A telegraphic AD - comes down through SID program if an discrepancy is found.

- Ass workers / mechanics are non-union now except for one support shop.

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ENGINEERING NOTES

EMPLOYEE Prema DATE 6/26/96 PAGE NO. 1

RCC MATPFA SUBJECT INTERVIEW WITH EDDIE GONZALEZ

EDDIE GONZALEZ

SAT – service acceptance test

RAR – run as received – to determine what needs to be done for info out to verify customer info on defect

SIT – special investigation team

175 – for sub assemblies

Auto setup – computer test – (AS1)

5002 – series test stands can be used for several ~~testing~~ different testing procedures – however, often a unit is dedicated to simpler tasks

5004, 5005 series stands are more limited in and less flexible in regard to the types of tests they can be used for.

– recently there has been good improvement in the reject can ratios (SAT test)

– This ↑ is due to the RAR initial tests

NOTE:

MR. Gonzalez seemed ~~Knowledgeable~~ Knowledgible and cooperative

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010023

ENGINEERING NOTES

EMPLOYEE Primo DATE 6/27/90 PAGE NO. 1

RCC MATPFA SUBJECT INTERVIEW WITH BUDDY PELAYO

GAS GENERATOR AREA (Buddy Pelayo)

KB CAMSHAFT Repair press apx 12 hrs - then rendexed then taken to 5004

Best way to determine times and rates of accurance is to talk to craftsman

(this is going to be difficult)

Sketch - hazy info from Mr. Pelayo indicates the need to talk to craftsman (although he was cooperative)

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010024

ENGINEERING NOTES

EMPLOYEE Prema DATE 6/28/90 PAGE NO. 1

RCC MAT PFA SUBJECT

EQ history record

question? ~~why~~ it appears that a majority of down time repairs for the ~~test~~ stand ~~is~~ involves labor only ~~is~~ and only a small relative expense on materials cost (parts?). Why?

- Is this caused by ~~defective~~
  - equipment wear?
  - maint. procedures
  - setup problems
  - improper test equipment

— difficult to tell, data appears to be dirty

— Investigate types and causes of repairs and down time

— breakdowns are almost a daily occurrence
  - often several different problems in a given day. Do these multiple breakdowns (in a given day) happen at different times or on a single block of down time.

investigate . . . .

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010025

ENGINEERING NOTES

EMPLOYEE Prem DATE 6/29/90 PAGE NO. 2

RCC MAT PFA SUBJECT

Mr. Felipe Cano (short interview)

5% of Augmentors will have to wait on DB (dist bodies)

{ Rudy Varia works a HC - best one (mechanic) } These mechanics are most knowledgeable of operations
{ Leija, Joe }

RARs are used as primary test to determine what is to be done

OCM - team then plans the required repairs where?

(9-12)/20 DBs need extensive repair

(apx 50%)

~~Few DB need repair - where?~~

Augmentors 40% need seperate work.

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ENGINEERING NOTES

EMPLOYEE Primo DATE 6/21/90 PAGE NO. 1

RCC _____ SUBJECT _____

Clyde Hartfield, operator on

— busy set in 3 shifts 5 shifts 21 shifts,
Mean Max
apx time for operation

— little diff when waiting 5002 for any set in
— must plug a line (Allgyline)

- Manifold pressure problems causes most shutdowns (pump problems)

Systems — usually when one machine goes down all in system fail
because common hydraulic feed system and common computer

— most problems with machines

→ PFZ, can in most common problem
→ in 5002's — take apart and replace wear points
→ other types of problems < stepper motor seepage (controller

— ~~have~~ on 5004 — sometimes switch test stands if part won't pass

— GARY SUBTLES — expert on Hamiltons

— usually maint comes to repair in about ½ hr - (immediate response)

— Sometimes 5 (or 2 times a year - vacation, Christmas etc.) an all day wait for maint. this seldom occurs and the problem may already be fixed

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ENGINEERING NOTES

EMPLOYEE Primo DATE 6/29/90 PAGE NO. 2

RCC SUBJECT TEST STANDS

Danny ~~Gedeas~~ Cavagos runs 5005's (operator)

very knowledgeable

Interview with Clyde Hartfield (cont)

- often on 5004's when a ~~test is~~ when a gas generator test is failing there is some difficulty in determining if the cause is the test stand or the GG.
  - Often the GG is moved to another machine to see if it will pass on a different machine... superstition or fact?
  - the switch takes apx ½ the time it takes to plumb a GG (about 1 hr)
  - in effect they use a GG as a diagnostic tool for the test stand.
  - this switching usually doesn't take place on the 5002 stands.
  - Would tighter adjustment and calibration spec's reduce this problem?

Call

- Chris Moran — ask about missing machine records
  - sorting of records
  - transfer of records to disk

Monday

Tina Mazatti — boss

Paul | Chris Moran

4747 phone number

Tim Mazatti —

Navar fifer - knows VAX system

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~~Chris~~ 04358, 04361 — missing records 010038

ENGINEERING NOTES

EMPLOYEE Joe Montano DATE 10 July 90 PAGE NO. 1 of 3

RCC MMTPFA SUBJECT MM brief on UFCs

Meeting Notes and Observation of MMTPFA

Briefed by Don Hoffkamp - MM

Purpose of Meeting: To gain customers (MM) view on MAT problems and how it impacts MM's mission of supplying field units with UFC's.

Depot inputs are driven by number of failures in the field. Number of inputs varies from month to month. Recent monthly average has been around 100 units. It seems that the average is seasonably affected. The highest input months are from May thru October. This is most likely due to the spring and summer months being the highest flying months.

Time in the pipeline from field units to the depot was unknown. The depot pipeline to UFC RCC is also unknown. Repair Cycle time is approx. 59± ? days

UFC unit cost is $160K

MM pays MAT $16 to 18K repair cost (F15)
$30K " " (F16)

Four separate repair facilities worldwide:

1. SA-ALC - provides support worldwide
2. IHI (Japanese firm) - supports PACAF units
3. PARC - supports USAFE units
4. Bendix - contractor support - handles overflow from SA-ALC

(Overflow from IHI and PARC is handled by SA-ALC)

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ENGINEERING NOTES

EMPLOYEE Joe Montano DATE 10 July 96 PAGE NO. 2 of 3

RCC MATOFA SUBJECT MM brief on UFCs

Number of UFC's handled by other repair facilities last quarter:

Pope - 75 F15
" - 63 F16
Bendix - 60 F15
" - 32 F16

Estimated UFC's in repair cycle	600
Units of SA-ALC	408
Units in repair cycle - SA-ALC	206

Total USAF UFC assets approx. 2700

Recommendations:

It would be interesting to compare data from other UFC repair facilities with SA-ALC data and find out if there are significant differences on output and repair cycle times. Also:

1. Number of outputs vs inputs per month
2. Work flow paths and times per task.
3. Personnel skill levels accomplishing each task
4. Number and types of test stands and test stand reliability.
5. Length of times components spend at test start.

Conduct an evaluation of test stand procedures with Bendix and Pratt Whitney assistance, to determine if testing of sub-components or UFC can be shortened. Current test times seem to be excessive and it's not clear whether any benefits are gained on UFC reliability

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ENGINEERING NOTES

EMPLOYEE Joe Montano DATE 10 July 90 PAGE NO. 3 of 3

RCC MATPFA SUBJECT Min Brief on UFCs

By such lengthy testing, if test points are being repeated from individual subcomponents (GG, AG, DB) tests and repeated again at a complete UFC test.

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ENGINEERING NOTES

EMPLOYEE GARDNER DATE 10 July 96 PAGE NO. 1

RCC MATOFA SUBJECT UFC mm Pipeline

Susan Schaffle (MAWFT), Joe Montano (MCAIR - Floos), and myself met with Ron Heidtkamp (mm). Ron described the process he performs and how mm manages the UFC repair cycle.

He is responsible for negotiating # of items repaired with MAE (UFC repair area). He has to try and match field demands with depot capacity, and mm budget constraints. He felt his biggest problem was a lack of usable data on RCC capacity/flowtime. He also indicated that he expected his function to be eliminated by the reorganization in October.

Mr Heidtkamp was also somewhat concerned about the number of UFCs that were WIP at various locations. There were a total of 210 units at various contract repair facilities and 408 on Kelly AFB. At an average cost of $160K per UFC this represents an inventory cost of $98.9 million (at a U.S. savings bond interest rate of 7%, this contributes almost $7 million a year to the federal deficit). The 618 units in WIP inventory represent about 25% of the total USAF inventory. Ron indicated that he felt that was not an unreasonable volume of failed units in an average population. I'm not sure if I agree, but plan to ask Lisa Baumgardner (Commercial Aviation expert) to find out what commercial aircraft fleets normally experience. Of the 408 on base, 266 were in the UFC repair facility. The rest were in MAE, in the DS warehouse, or in some temporary status (transit) in-between. The pipeline between field & depot was described as shown on the diagram below:

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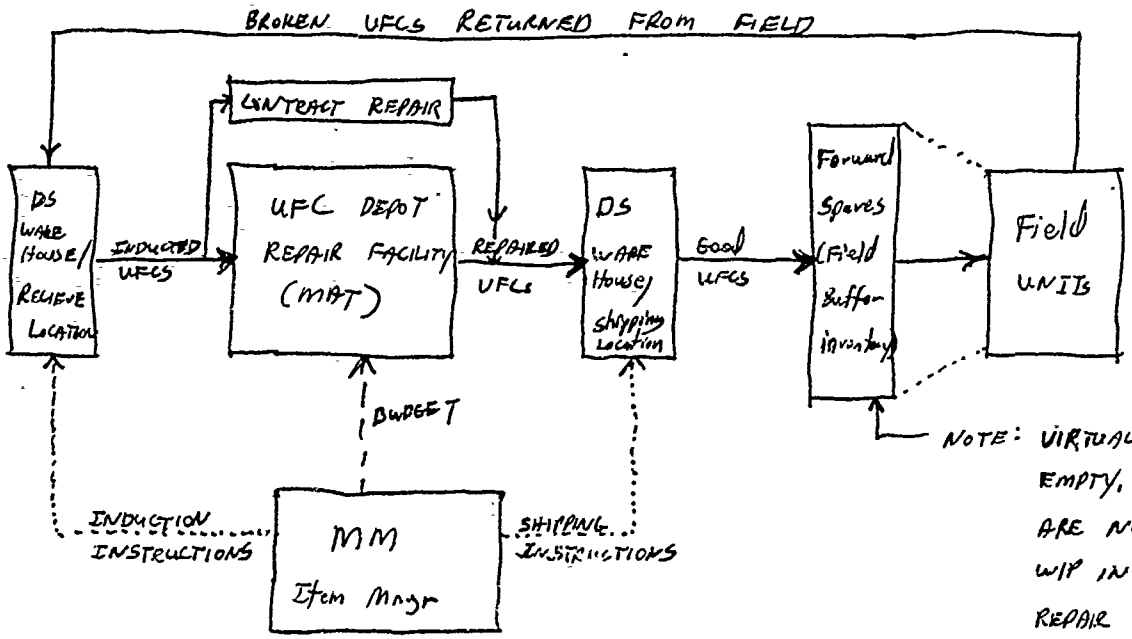
ENGINEERING NOTES

EMPLOYEE GARDNER DATE 10 July 90 PAGE NO. 2

RCC MATPFA SUBJECT UFC MM PIPELINE

UFC PIPELINE



TOTAL PIPELINE TIMES ARE UNKNOWN (TO US). The UFC depot has a published flowtime of 59 days. We are in the process of determining actual average historical flowtimes & distribution.

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010033

ENGINEERING NOTES

EMPLOYEE GARDNER DATE 10 July 10 PAGE NO. 3

RCC MATPEA SUBJECT UFC mm PIPELINE

Mr Headcamp also provided the attached charts showing UFC failure/Repair/MICAP rates for the last 8 months. Average monthly failures have been running at 98/month with a σ of 20.3, while production has been running at 91/month with a σ of 16. To ever reach a JIT flow, the repair capacity must equal average monthly failures plus 2σ. At current failure rates, total Repair capacity should be 140 ufcs/month. A least squares extrapolation of current failure rates indicates a trend toward increasing rate of failures. The effect is not pronounced and should be plotted with a larger sample space before any conclusions are drawn. Mr Headkamp indicated that failures normally increase from may - oct as summer weather tends to boost flying hours and, thus, increased use of Field UFCs. I think an optimal total capacity for the [redacted] depot repair operation should be about 140/month. This will allow a JIT flow at current operational levels, and keep WIP levels under control.

Total Average monthly production rates were given as:

Pratt & Whitney o'seas Repair	–	15-20	(USAFE)
IHI	–	5	(PACAF)
Bendix	–	20	(conus)
SA-ALL UFC Depot	–	100	(CONUS / everywhere)
Total	=	145-140	

Why is there a WIP build up?

Ron Headkamp advised us to speak to Wendy Walden – UFC Item manager, for more detail on the pipeline. Susan Schottle agreed to identify a contact in DS (Supply) to help us identify total Kelly AFB flowtimes.

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ENGINEERING NOTES

EMPLOYEE LKB DATE 204 PAGE NO. 1/2

RCC SUBJECT civ mx comparison

VISIT: NWA / Minneapolis (HQs - for all hubs)
Plans & Scheduling dept.
TRAINING / MAT control

Met 1st w/ the mngr of Reliability Control —
Data collection and evaluation controlled here.

Reviews for procedural rewrites are initiated at this level. She told me that the majority of unscheduled eng. mx comes from bird strikes, other FOD ingestion and pre-flight engine run-ups. Very little problem w/ inflight write-ups that cause engine teardown.

Usually, unsch mx of engines do not end up requiring EHM (Eng Heavy Mx) unless:

- life limits are getting close
- boroscope insp shows more damage
- long time since last heavy maint.

(Gail no inflight problems)

Engines seem to stay in service more when brought in for unscheduled and have partial or full teardowns in EHM —
However, price gets higher due to parts changed more frequently and labor costs raise somewhat, but not significantly.
Because you zero time under EHM, it reduces amount of removals for scheduled reasons.

PROBLEM: HIGH INFANT MORTALITY RATE WHEN PARTS COME OUT OF SHOP (ON ANY COMPONENT)
- STILL TRYING TO REDUCE THESE STATS!

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010035

ENGINEERING NOTES

EMPLOYEE LKB DATE 204 PAGE NO. 2/2

RCC _____ SUBJECT NWA

USING new methods of eng. performance monitoring
- right now, there are sharp shifts in performance, which indicates a problem - but they expect that to smooth out once the system is integrated.
  - part of this has been a switch to more on-cond inspections on line -
  - part of this is some new equipment (state-of-the-art eng. monitoring)

Have about 40 extra engines (spares) of all diff types in the sys - several are located overseas where leasing is a problem.
- the rest are split between US hubs.

When there are not enough in stock due to spikes in the unscheduled mx, they lease from AAR. [redacted]. The leasing group is in Chicago. AAR uses another overhaul, 3rd party facility, rather than do eng mx themselves.

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ENGINEERING NOTES

EMPLOYEE LKB DATE 2 05 PAGE NO. 2/5

RCC SUBJECT

TRAINING cont -

Redesigning of inspection programs; areas where changs have been made:

- individual tasks are always scrutinized for redundancy in the overall prog.
- utilize downtime better
- keep depot-level MX moving quickly
- doing "packaged A" checks
- SID program
- Heavy MX prog.
- Maintain or improve safety levels

Engine overhaul facility and computer maint-tracking sys

Septre II is utilized here. When I mentioned that Continental used it, too, I was told "Republic had it first, utilized it completely. When Northwest merged w Republic, NWA had been all manual. In 4 years, they brought NWA on line and ~~that~~ now we're the only airline using Septre in its entirety."

We following some parts through the system; at the same time, I got a run through of how the engine runs and how units/modules and all parts are tracked.

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010057

ENGINEERING NOTES

EMPLOYEE LCB DATE 205 PAGE NO. 3/5

RCC SUBJECT CIV MY

Eng. line cont.

Modular concept for eng overhaul well underway.

When an eng is determined to need EHM, scheduling puts the serial # of whole eng. into sys.

This reads out what serial #s are on the eng per module. You can go, then to each module and pull up last major maint on that module, what eng (if any) it was ever on before, and any major write-ups (for FOD or eng failure) that occ'red on that engine when the module was attached.

You can break down each module similarly with any parts that have serial #s.

All modules stay together except for parts that must be discarded. Rework parts (if they can be reworked in time) go back on same module.

All modules go back to same engine serial # unless waiting on a module would cause a big hold-up.

With scheduled overhauls, it is easier to keep all modules together, as parts are ordered in adv. W/ unscheduled OX, this is where the MOST deviation is found.

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ENGINEERING NOTES

EMPLOYEE LKB DATE 205 PAGE NO. 4/5

RCC SUBJECT civ mx

EACH serial # on each part of each module of each engine can be tracked at any time.

Eng. line looks rather chaotic from a walk-through standpoint, but a demonstration of the computer sys convinced me that it was organized.

We could walk over to a part (which are all tagged w/ serial #s) and scan them w/ a pen scanner or punch in the serial # by hand --

Then the computer would tell you what the part was, what had been done, what it was waiting on (if anything) and what module it was pulled from.

Cleaning is done at each module repair section, except for an overall wash-down prior to disassembly.

→ PARTS are ordered through Septre as min. on-hand # shows up in computer.

All info on inventory can be accessed by Plans, Scheduling, Production, Budget, and systems/ops. (Probably other areas too!)

Several vendors available for most parts, with 1st choice, 2nd choice, etc when it comes

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ENGINEERING NOTES

EMPLOYEE LKB DATE 205 PAGE NO. 5/5

RCC _____ SUBJECT CIM MX

cont. - orig / computer.
to ordering on demand.

Usually parts are available through regular sys, however.

Good to have access to other vendors if necessary - keeps process running smoothly.

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ENGINEERING NOTES

EMPLOYEE LKB DATE 206 PAGE NO. 1/1

RCC _____ SUBJECT non-chem. paint stripping
Dry ICE

Watched Dry ice method of paint stripping at MDC in St. Louis.

Great on metals, tore up composites and didn't really clean our carbon'd parts very well.

Couldn't use it for soft metal, either, as it damaged the structure.

So, essentially, good for large areas of solid airframe where there are no areas of composites or thin layers of metal (edging, etc.) —

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ENGINEERING NOTES

EMPLOYEE LKB DATE 207 (Am) PAGE NO. 1/1

RCC _____ SUBJECT Bleached Stretch / plastics non-chem paint stripping

St Louis –

Saw demonstration at House of Tools & Engineering –

1st was Bleached Starch media –

Did well on composites, w/ little or no damage.

Cleaned carbon from parts fairly well.

2nd was a Plastic media –

saw demo on Carbon'd parts only

did a great job even in small edges/crevasses

brought parts back to talk to NDI lab for cleanliness insp.

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010042

ENGINEERING NOTES

ATT

EMPLOYEE LKB DATE 2007 PAGE NO. 1/2

RCC back in San Antonio SUBJECT civ comparison

PHONE conversation - as follow up to visit in June
Continental Airlines – Plans & Scheduling / GATEWAY
Houston, TX

Dealing w/ unscheduled maintenance that affects both line mx and off-line mx, tracking of delays and repeats is done daily.

Hubs have conference calls every morning (about 10 AM) w/ P&S personnel in Houston – HQs.

Placard research & properly-coded delays work into this tracking sys / Hub conference.

Unscheduled maint that occurs regularly becomes info for rewrite of MX procedures. Updates are suggested quarterly. This, in turn, affects depot-level maint for engines and airframes.

Major MX of large engines done in Houston, but capacity is not high for this right now, so outside vendor picks up excess... This includes engines down for unscheduled MX if cannot be fit into shop ASAP.

Price is higher for outside vendor, so plans to expand their own facilities are underway. However, outside vendor (3rd party MX) returns work promptly, so its better that having engines/parts sitting around waiting on test stands or whatever.

All Mechanics are A&Ps & half of those have AIs, so there's no shortage of people to sign off work!

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ENGINEERING NOTES

EMPLOYEE CGB DATE 2/07 PM PAGE NO. 2/2

RCC _____ SUBJECT C.V MX

PARTS (stores) gets involved in daily conference and in planning meetings.
— Access to several vendors is available at mid-level management. Mngmt has to justify why they ordered what if prices are exceedingly high — but management is definitly empowered.

Regular scheduled mx — parts are ordered thru the sys w/ bids going in for lowest (but high quality) parts!

Of course, all parts bought are FAA-approved, so quality shouldn't be an issue.

Leasing on engines will occur when necessary, as total spare inventory is very low — about 35 for all types-total.

Engines cannot remain out of service for any length of time? They have none extra components, however.

Mentioned my question of % of failed UFCs in system — actual # was not known by my contact, but he estimated 15%.

there are certain components that are overstocked due to high-breakdown stats... however, I couldn't get exact #s.

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010044

A. Majoros Engineering Notes
Human Factors Evaluation of UFC Test and Repair Aug 15, 1990

I Areas of possible improvement in human factors were partly indicated in earlier notes. Others can be mentioned now, but it should also be noted that (A) some observations with relevance to human factors are already being offered (as they should be) by the on-site MDC team, and (B) the Air Force will not commit substantial resources to the UFC test and repair facility because its role is perceived as declining over the next 15 years.

Regarding A and B above (and postponing notes about possible human factors improvements): First A: A representative suggestion by the MDC on-site team with human factors relevance is the suggestion that lower-skill-level persons be assigned the task of plumbing & de-plumbing controls on test stands. The fact that this suggestion is not implemented right away is indicative of the very complex process/people/equipment interactions taking place in the shop. Human factors as a methodological approach (and as a profession) would be remiss to exclude these interactions from notice and to concentrate solely on the "local" environment of human/UFC/test stand or repair bench. The actual situation in the facility that * results in less than satisfactory throughput is primarily found in the complex

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process / people / equipment interactions and not in "local" environments.

Now B: It appears that only relatively inexpensive approaches will be considered by the Air Force due, understandably, to the perceived role of the UFC facility in the future and to ever-present budget conditions. Just as importantly, customer expectations may constrain recommendations to the point that they (suggestions and recommendations) match pre-existing operating philosophies. This situation might lead human factors input toward inconsequential items; that is, observations that pertain to operator or craftsman comfort or satisfaction but have little to do with shop production levels.

A related matter is management pressure on the shop to increase production. Such pressure may reduce the willingness of shop personnel (operators, craftsmen, "off-site" or test stand maintenance people, and supervision) to contribute to the goals of a process study because they believe that their time is better spent on their regular work.

These points (A & B) suggest that an effective human factors approach is the study of information format and transmission in the

facility at some manageable level. Information format and transmission could be an effective (good return on investment) area of intervention under the existing conditions because (1) there are significant gaps in information revealed by conversations with facility personnel *(Dave Biber, Merilynn Henderson, Frank Mann), (2) properly formatted information has been regularly shown to improve human performance, and (3) many information-oriented interventions are inexpensive.

Now we can indicate areas of possible improvement with relevance to human factors. These observations are not limited to only information-oriented interventions, but our belief is that information-oriented ones would best meet the needs of UFC test and repair facility.

1. For RAR test, report all out-of-limits results together from the test stand computer. This action will save operators from searching through many pages of printer output and may help to formalize the repair decision process. Requires changes to test stand software.
2. Dedicate certain test stands for RAR. During initial testing, a UFC may have more contaminants

* These people are very knowledgeable, they were instrumental in identifying information needs.

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which can clog test stand filters. This condition results in more down-time for stands used for initial flushing and checking. Possibly, dedicated test stands could be fitted with different filters to reduce down time. This observation may be from Greg Gardner.

3. Increase retraining and recertifying of operators
4. Reduce the number of paragraphs (tests) in RAR to those most likely to uncover problem conditions.
5. Provide to OCM team information regarding repair path of individual units. Track by serial number.
6. Standardize RAR procedures. Currently, according to Dave Biber, an operator may conduct test procedures without making corrective adjustments to a control, or may conduct tests and make adjustments to a control in an effort to bring a control to "within limit" condition. This option suggests to us that the objectives of RAR are not clearly understood or shared throughout the facility.
7. Turn-over logs and notes that provide continuity information on UFCs from shift to shift may not be in an optimal format. We have not been able to inspect these materials

or talk with operators about this use, but it seems reasonable that time could be saved if an operator could quickly determine the status of a control.

6. Related to #7 above, advisories, tips, novel approaches and other information distributed to operators about UFC test and adjustment (or information distributed to craftsmen about repair) might be an area of potential improvement. Guidelines for producing such information in clear, easy-to-follow format are available from many sources.

II. This human factors evaluation, as indicated above, suggests that information transmission and format is the best area for study in terms of efficiency/productivity influence and low cost. Characteristics of the facility should guide any detailed study or should be taken into account with proposed interventions. The following are characteristics of operator and OCIM team information that we observed:

1. Tech order (TO) instructions are oriented to overhaul, not repair. They are outdated, considered to be "generic," and do not include procedure logic trees or diagrams.
2. ~~Test and~~ Adjustment procedures appearing

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RCC _____ SUBJECT _____

on test stand computer screens are also considered "generic" by operators.

3. Operators differ in their reliance on provided "generic" instructions. They are at liberty to attempt alternate approaches and improve their knowledge by working novel or uncommon problems.
4. Operators may enter notes regarding uncommon procedures into notebooks. Apparently, these notes accumulate into something like a "personal technical journal."
5. Operators may share (often or seldom?) their discoveries of effective approaches with other operators, usually verbally. Operators who hear verbally presented ideas and tips may write these things in their notebooks. There appear to be no data on the accuracy of operators' notes.
6. The OCM team distributes tips and novel solutions by memo or advisory on paper to operators.
7. Frank Mann, before becoming OCM Team Leader, started a trial system whereby operators in his unit would write their diagnostic and adjustment procedures on sheets of paper and turn them in to him. Mann's intent was to sort through the written sequences and determine the most effective troubleshooting sequences for specific problems. Mann told us that his system was popular in his unit because it increased the amount of shared information about specific problems. He was promoted before collecting enough of the forms (sample is attached) to derive optimal sequences.

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8. A pool or corpus of knowledge appears to exist in the test facility (and undoubtedly the repair facility as well) regarding ~~procedures~~ adjustments and corrective procedures that are not found in the TO, nor on test stand computer screens. This pool of information is the collective, specialized knowledge of operators, OCM team members, supervisors, and notes, memos, etc relevant to corrective procedures

9. A complex interaction between operator, off-site repair, UFC condition, and test stand condition also characterizes information. Probably many effects here, but size of effects is unknown

These characteristics point to a possible technique or method to capitalize on operators' specialized knowledge. Essentially, the method calls for a computerized data base containing diagnostic and adjustment (corrective) information. We envision this to be a low-cost, pc-based, evolutionary build-up of troubleshooting logic trees that supplies the requesting operator a paper printout. We plan to describe this idea in greater detail and send the description to the MDC on-site team in 2 to 3 weeks.

III We note that in telephone conversation with Gray (site leader), it was decided that human factors evaluation could concentrate on one Task Order, namely the UFC facility. This decision would permit a more thorough analysis of one area, rather than a brief examination of two or more areas.

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IV It seemed appropriate to human factors specialists and to the site leaders to focus attention on a critical decision point within the test and repair process. While we did not hold to this target, our focus brought us to consider information processes related to a critical decision point. Thus, our intervention idea, which we plan to mail in 2-3 weeks, uses an M & I test leading to a "de-mate" / don't "de-mate" decision as a vehicle for description. We believe the intervention could be widely applied — eventually to cover all test paragraphs.

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TROUBLE SHOOTING DATA

UFC SER: #32522 ITEM UFC DATE 19 Dec 89 T/S 2-010

SPECIFIC PROBLEM, ENTRY #, TEST POINT, DESCRIPTION Entry #11 T.P 5.000
Unable to adjust flows
DATE 12/20/89 T/S 033 Problems with Day's 1st shift was known to turn max trimmer 15 turns to get flows between 7310-7610, found Plap Trim centering too far down Entry #25

TROUBLESHOOTING STEPS TAKEN IN SEQUENCE:

1. Pre-sets the accel cam followers, MV Boost Piston & N2 servo: OK now.
   Date 12-20-89 T/S 033
2. 1st - They backed out on plap Trim centering where max flow could be attained @ 10 turns
3. 2nd Shift Went back and brought linearity back into limits
4. Adjusted N2 Cam followr lever shaft, N2 request servo valve and P&W Trim Cam followers adj and brought governor into limits
5.
6.
7.
8.

REMARKS:

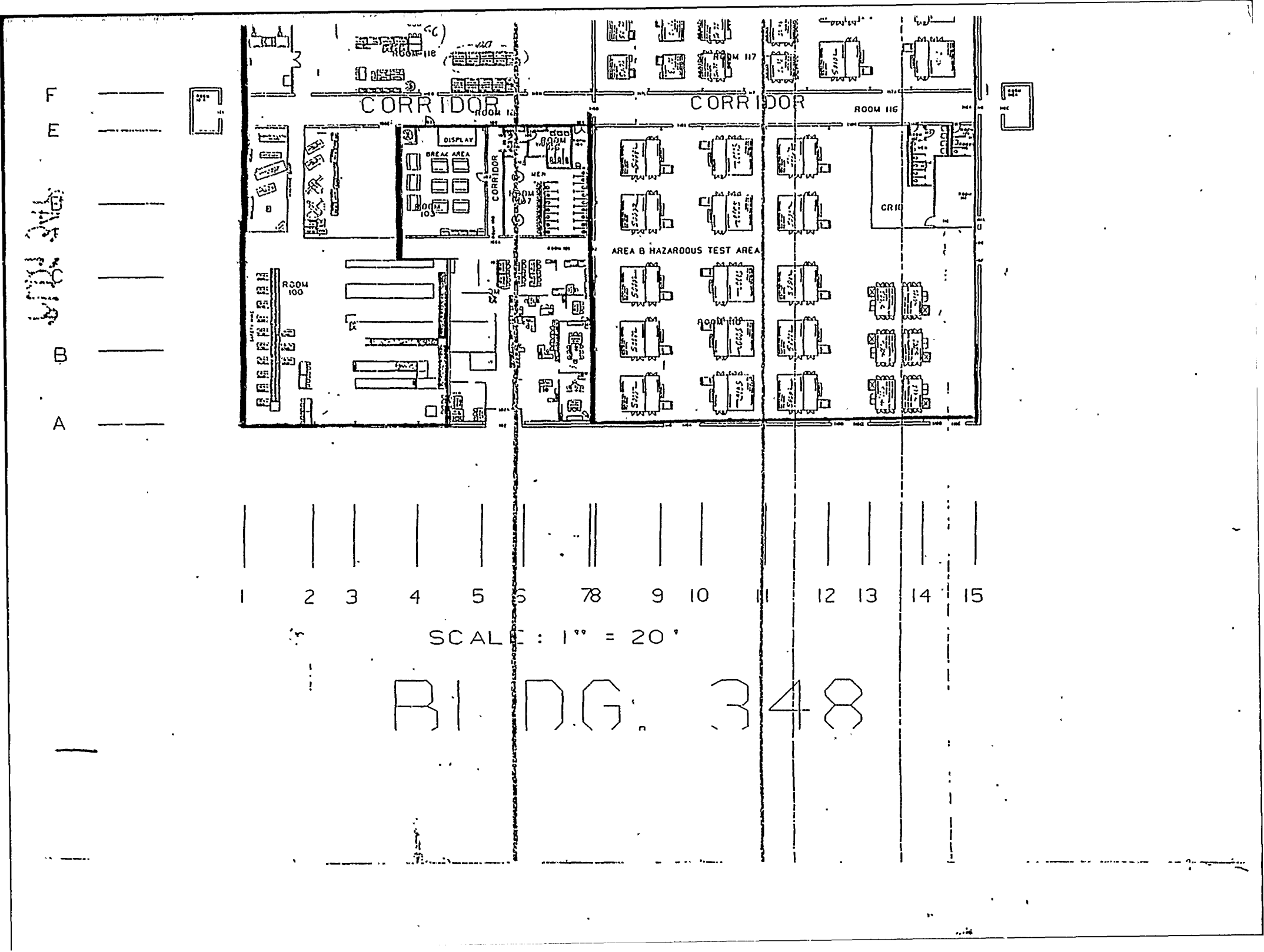
WHAT FIXED THE PROBLEM? adjusting Plap Trim centering adj.

SPECIFICALLY, WHAT WAS UNIT REJECTED FOR? Unable to adjust flows

DDB Section: T.O

2.0

FACILITIES


F
E
D
C
B
A
CORRIDOR
CORRIDOR
ROOM 116
ROOM 117
DISPLAY
BREAK AREA
CORRIDOR
ROOM 103
MEN
ROOM 107
ROOM 100
AREA B HAZARDOUS TEST AREA
CR 10
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
SCALE: 1" = 20'
BLDG. 348

N
AREA D HAZARDOUS TEST AREA
CORRIDOR
ROOM 116
AREA C OVERHAUL
CORRIDOR
ROOM 118
AREA B HAZARDOUS TEST AREA
CORRIDOR
BREAK AREA
DISPLAY
ROOM 100
K
J
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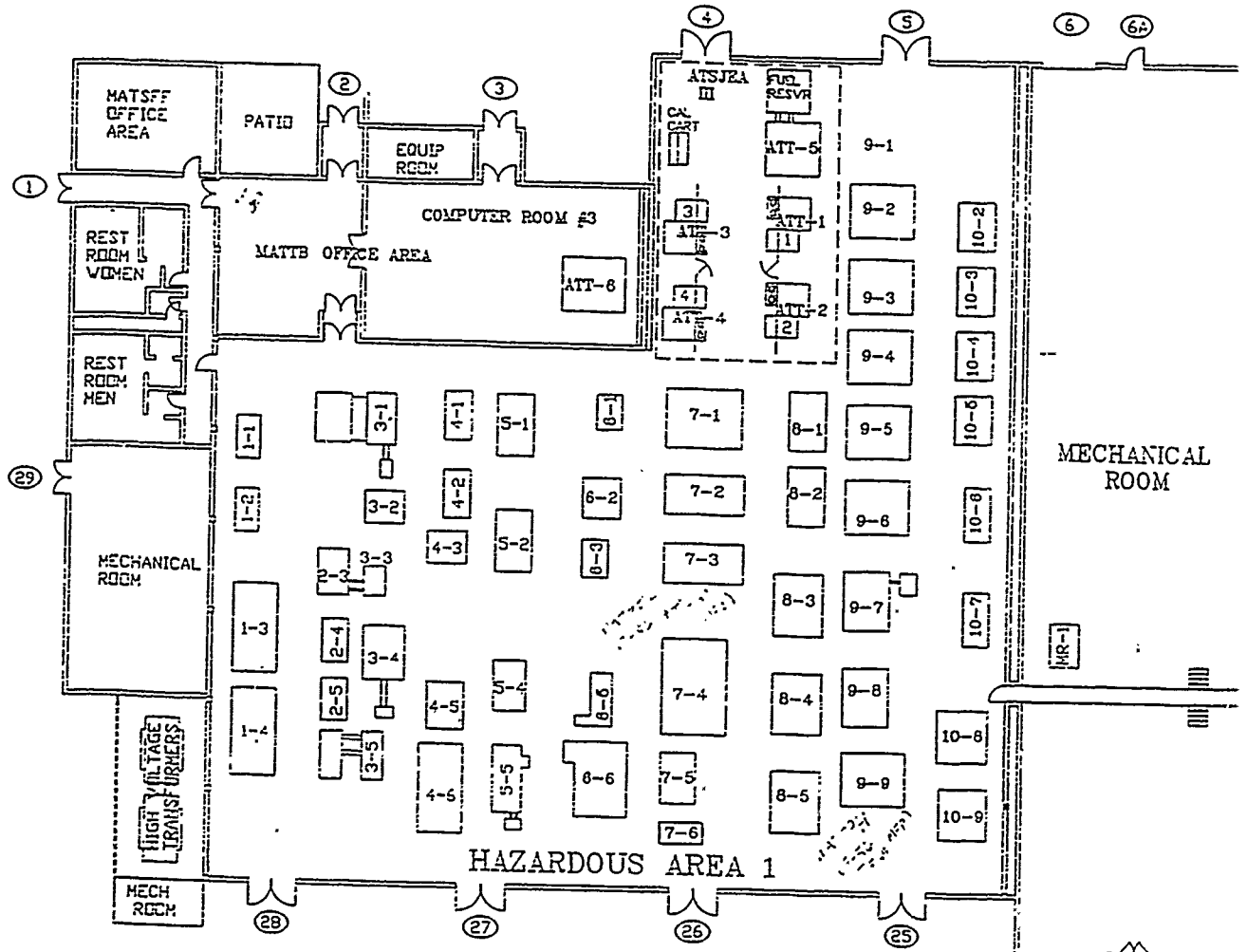
1

BI
(UPDA



CROSS-REFERENCE OF BLDG 347 LAYOUT NUMBERS

UPDATED LAYOUT NO	PREVIOUS LAYOUT NO
3-3	UNLISTED
6-1	6-0
6-2	6-1
6-3	6-2
6-5	6-3
6-6	6-4
ATSJEA III AREA	
ATT-6	UNLISTED
ATT-5	AUX EQUIP
ATT-3	7-3
ATT-4	7-4
ATT-1	8-2
ATT-2	8-3
7-1	7-5
7-2	7-6
7-3	7-7
7-4	7-8
7-5	7-9
7-6	7-10
8-1	8-4
8-2	8-5
8-3	8-6
8-4	8-7

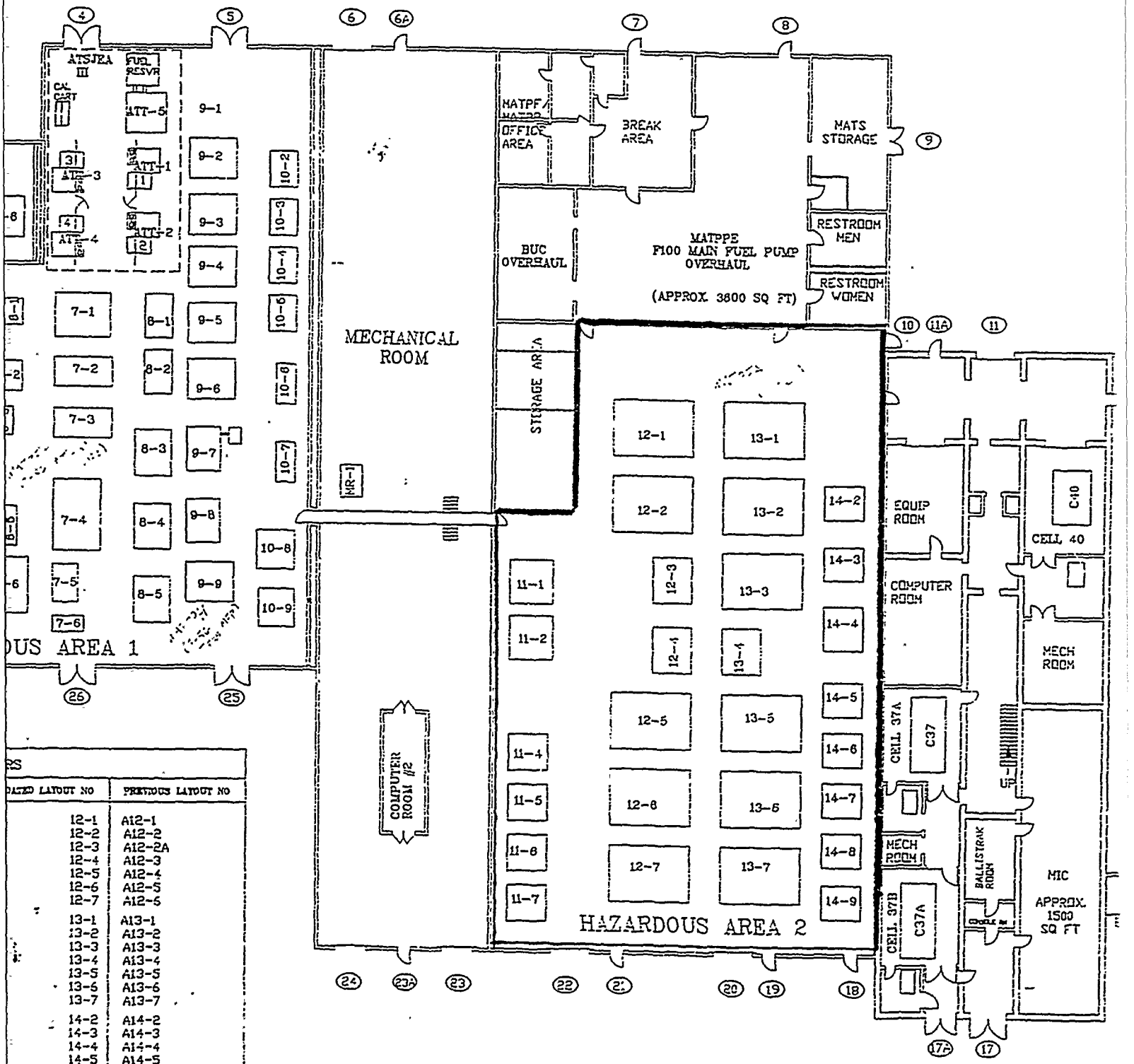
UPDATED LAYOUT NO	PREVIOUS LAYOUT NO
8-5	8-8
9-1	9-0
9-2	9-1
9-3	9-2
9-4	9-3
9-5	9-4
9-6	9-5
9-7	9-6
9-8	9-7
9-9	9-8
10-2	10-0
10-3	10-1
10-4	10-2
10-5	10-3
10-6	10-4
10-7	10-5
10-8	10-6
10-9	10-7
11-1	A11-1
11-2	A11-2
11-4	A11-4
11-5	A11-5
11-6	A11-6
11-7	A11-7

UPDATED LAYOUT NO	PREVIOUS LAYOUT NO
12-1	A12-1
12-2	A12-2
12-3	A12-2A
12-4	A12-3
12-5	A12-4
12-6	A12-5
12-7	A12-6
13-1	A13-1
13-2	A13-2
13-3	A13-3
13-4	A13-4
13-5	A13-5
13-6	A13-6
13-7	A13-7
14-2	A14-2
14-3	A14-3
14-4	A14-4
14-5	A14-5
14-6	A14-6
14-7	A14-7
14-8	A14-8
14-9	A14-9

2

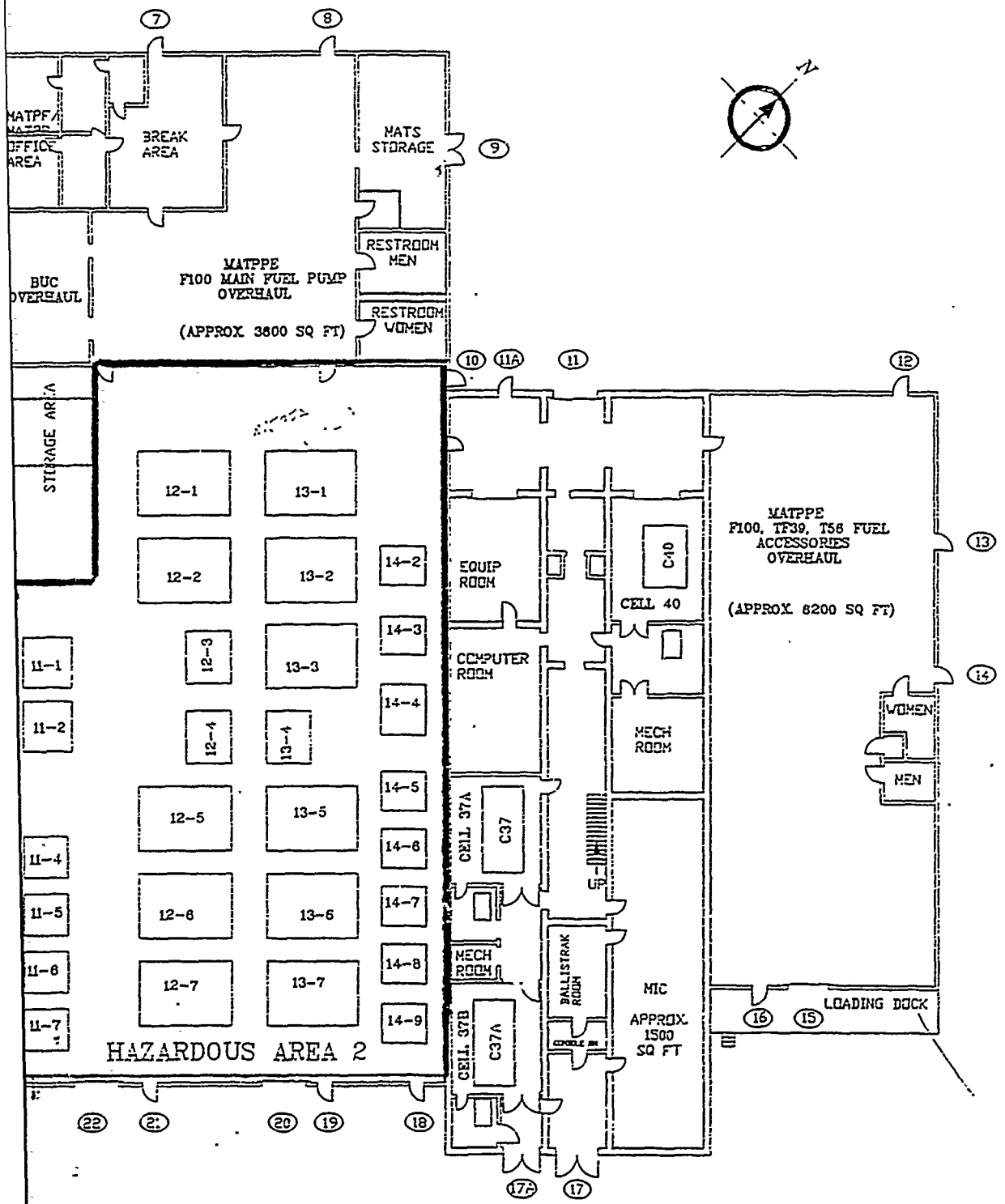
BLDG 347

(UPDATED 17 OCT 89)



DATED LAYOUT NO	PREVIOUS LAYOUT NO
12-1	A12-1
12-2	A12-2
12-3	A12-2A
12-4	A12-3
12-5	A12-4
12-6	A12-5
12-7	A12-6
13-1	A13-1
13-2	A13-2
13-3	A13-3
13-4	A13-4
13-5	A13-5
13-6	A13-6
13-7	A13-7
14-2	A14-2
14-3	A14-3
14-4	A14-4
14-5	A14-5
14-6	A14-6
14-7	A14-7
14-8	A14-8
14-9	A14-9

DG 347
ED 17 OCT 89)



HAZARDOUS AREA 3

3.0

EQUIPMENT

276

MEMO

ICWD-275
13 August 1990

Subject: UNIFIED CONTROL TEST STANDS

To: Greg Gardner

CC: Jim Grounds (Kelly Air Force Base), Kent Schien (MDMSC)

Encl: (1) Cost Per Disk By Quanity in $
(2) Material Compatibility of Hydrocarbon Fuels

From: Sean D. Crosby

1. I Recently completed a quick inspection of the Unified Control Test Stands located at Kelly Air Force Base in San Antonio, TX. I found the units to be quite good and considering that 49 units have been in operation for 10 years, I am sure that the Air Force is well aware of this fact. I do have a few observations that may be of help and interest.

2. The burst disk seems to add more than its share of down time to the program. Rupture of the disk may be occurring due to true over-pressurization. There is some indication this may happen if controls are not reset after a test is interupted before completion. When the test is resumed, the surge may cause a rupture.

Another reason may be the type of burst disk being used. The disk in service now, made by Fike Metal Products, is an aluminum pre-bulged, rated at 250 psig. The tolerance on the burst pressure is + 10%, -5% and the recommended working pressure is 70% of burst. This puts the working pressure of the disk at 166.25 psig. The stands are commonly operated at 185 psig. This and the fact that pressure is cycled between 50 psig and 185 psig, more than 50 times during a test is causing the aluminum disk undue stress. A disk of monel is better suited for cycling. A nickle disk would also work but would be incompatible with JP-4 (see paragraph 4).

One other item on the disk is that its part number indicates that it is rated at 72°F. If it sees a higher temperature the burst pressure will be lower. During my short stay in San Antonio I was unable to determine what temperatures were involved.

None of the pre-bulged disks are rated at 80% of burst. To achieve this you can go to a scored disk which is the only other disk made by Fike which can fit into the present type BU burst disk holder.

The scored disks are more expensive. You will have to determine the amount of down time caused and the time involved in replacing a disk that has ruptured to determine cost savings. Enclosure (1) is a chart of costs per quantity and type of disk.

DDD Section 3.0/9.0

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0233D-1

AUG 14 '90 13:49 MDMSC C-17MSH ASL P02

ICWO-275
13 August 1990

3. One change that would save time during set-up would be to use quick-disconnects (QDS) at the 20 separate 1/4 inch hose connections of the Unified Fuel Control (UFC). The time involved to connect a swivel nut fitting and torque it properly is approximately one minute (Ref. MDAC Standard Data C1.21.4.2 and C1.21.24.35). Utilizing quick disconnects should save about 19 minutes per test. Attaching the QDS to the UFC will take no longer than the 37° flare fittings now used.

4. Last I would like to offer a word of caution. I was told that JP-4 would soon be replacing soldered solvent as the test fluid. JP-4 is not compatible with brass, nickle, zinc or bronze (see Enclosure (2)). The following item numbers from the test stand drawings contain theses materials: 33, 40, 102, 103, 524, 539, 547, 580, 635, 636, 651, and 658. There are more but this is a representative list. It also needs to be verified which of these actually come into contact with fuel.

5. If you have any questions or if you have another task that I can be of help with, please let me know.

Sean D. Crosby
Principle Specialist Engineer
MDHSC-STL, 314-233-0077

SDC:dal

COST PER DISK BY QUANITY IN $

	1	2	3-5	6-19	20-49	50-99	100-199	200-499	500-999	1000 & UP
MONEL SCORED DISK	460	237	165	91	81.9	77.35	72.8	68.25	65.52	63.7
ALUMINUM PRE-BULGED DISK	109	51	37	20	18	17	16	15	14.40	14

ENCL. (2)

279

3.3 MATERIAL COMPATIBILITY

[redacted] selection for use with hydrocarbon fuels is required in the design of [redacted]uipment and the aircraft and engine fuel system. Noncompatible metals [redacted]ation of the fuel, while the fuel may attack nonmetals and gaskets to [redacted]nction as well as degrading the fuel itself.

3.3.1 Metals

The following lists categorize metals that are satisfactory for use with hydrocarbon aircraft and missile fuels, and those that are not recommended:

Satisfactory	Unsatisfactory
Aluminum and all its alloys	Bronze
Carbon Moly Steel	Nickel
½ to 3% Ni Steel	Copper
4 to 6% Chr. Moly Steel	Zinc
300 Series Stainless Steel	Cadmium
400 Series Stainless Steel	Brass
Monel	

3.3.2 Packing and Gasket

The following materials are recommended for use for packing and gasket applications with aircraft and missile hydrocarbon fuels:

Nylon	Fluorothene A
Kel-F	Vinylite
Trithene	Teflon
Polyethylene	Fluorel
Buna N (linear compound MJ-70) for JP-4, JP-8 only	Viton

The choice of material depends upon the temperature level of the application.

3.3.3 Lubricants

Lubricants used in conjunction with fuel system components such as pumps and controls may come in contact with the fuel being transferred. The following lubricants are recommended for use in fuel systems handling aircraft and hydrocarbon missile fuels:

Molykote	MIL-G-6032 Grease
Fluorolubes	Electrofilm Graphite Coating
	[redacted]

ALSO → MIL-G-27617 (NOT ON ALUMINUM OR BRONZE)

MIL-G-6032 IS GOOD FOR FUEL SYSTEMS AND OXYGEN SYSTEMS
MIL-G-27617 " " " " " "

030064

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/2/90 PAGE NO. 1

RCC MAT PFA SUBJECT TEST STAND MAINT

Interview with Jim Grounds 5-5114

- Notes for maint -

questions

- major breakdowns? (most time consuming) what components
- how often (age)
- find 20% of failures that account for 80% of downtime

---

main problems with test stands - shortage of operators

- need more operators (time)
- visits to test stands considered not too productive
- # of operators critical path
- at one time there was a shortage of fixtures + tools
- straight eight hours not considered productive
- doing longer PM shutdowns because can do a better job & with longer time and there are plenty of extra test stands
- rearrange PM schedules

DDB SECTION CODE 3.0 DDB PAGE NO. 030005

ENGINEERING NOTES

EMPLOYEE Preuss DATE 7/2/90 PAGE NO. 2

RCC MAT PPA SUBJECT TEST STANDS - Jim Grooms

- 20% of maint crews dedicated to software
- need to promote and hire from outside
- no gen history of test & stand failures as used to determine which parts are ordered for spares??

- there is a possibility that some stands are used more than others (favorites)

- Susan Randolph VAX PERSON will down load maint records

MR. Grooms appears to have a handle on the maint. problems and was very helpful

- need to talk with him more on the specifics of test stand breakdowns, repairs, and maint.

DDB SECTION CODE 3.0 DDB PAGE NO. _____

030066

ENGINEERING NOTES

EMPLOYEE Prems DATE 7/5/90 PAGE NO. 1

RCC MATPFA SUBJECT TEST STAND # DOWN TIME

→ Sorting of test stand historical data (GO 11)

Ideas - - -

1. sort by length of down time (longest first to shortest)

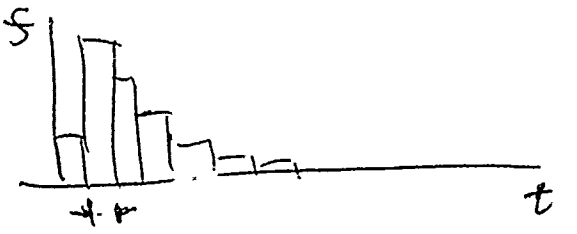
• this might indicate what problems take the longest to fix and might show a shortage of parts inventory, tools, etc

2. sort by type of failure (problem)

by doing this type of sort it may be easier to locate the most common type of failure or problem and help to get a general idea of the relative distribution of down time by failure

3. sort by length of down time and use this data to develop a histogram of the frequency distribution of down times:

(should use ranges instead of discrete values)



DDB SECTION CODE 3.0 DDB PAGE NO.

030007

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/6/90 PAGE NO. 1

RCC MATPFA SUBJECT TEST STANDS (GO II data)

historical test stand data

model will require 1. mean time Between failures (MTBF)
* (min, mode, max)

2. mean time to repair (MTR)
(min, mean, max)

1. (MTBF) – min, max are obtained directly from data.
– the mode ~~should~~ be ~~calculated from~~ approximated by a range determined from the examination of a histogram of the frequency distribution of down times

2. (MTR) – ~~obtains~~ ~~error~~
min, max obtain directly from data
– mean is obtained by ~~taking~~ average of all the data.

- All MTBF, MTR, and failure numbers should be derived for each machine, each class of machines and all machines total?

no

- MTBF's – times between failure are obtained by simply subtracting the time of a failure from the ~~the~~ following failure (easy calc.)

DDB SECTION CODE 3.0 DDB PAGE NO. 030068

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/9/90 PAGE NO. 1

RCC MATPFA SUBJECT TEST STAND REPAIR DATA

(GO 11)

Susan Randolph had completed a "first run" of the maint. records:

- min, max, median, and avg data was tabulated (by machine)
- poor data caused several problems
  - dates and times are at times inconsistant and/or missing
  - the calculated medians look suspicious
  - a lot of data was discarded (for example, down time for several of the ~~entries~~ entries was 0.0. This raises some questions as to the validity of the data)
  - comments ~~as to~~ describing repairs are inconsistant and could be more descriptive and accurate.
  - most of the problems could be corrected in the future with more careful data entry and format changes.
- A considerable amount of data editing is required to "clean" the data to a point where is can be used for calculating MTBF's and MTR's
  - this will take a considerable amount of time and EFFORT

DDB SECTION CODE 3.0 DDB PAGE NO.

030009

ENGINEERING NOTES

EMPLOYEE Prevo DATE 7/9/90 PAGE NO. 2

RCC MATPPA SUBJECT

(Susan Randolph is on leave this week)

Earl Carter (VAX MAIN) ~~has job~~ will be working on the data (when he can find time)

- he supplied an example of the ~~data~~ ~~file~~ repair record for ~~the~~ a machine on a 5 1/4 inch IBM Sloppy disc.
- hopefully we will be able to work with the data on an IBM clone using Lotus 123, or a data base program.

M. Henderson suggested that the data be returned to its source and cleaned up there.

- However, this would take at least 2-3 weeks.

We can't wait that long. We will have to come up with a good estimate for the MTR and MTBF values from the data we have and then hope for better data to work with if more accuracy is required.

DDB SECTION CODE 310 DDB PAGE NO.

030010

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/11/90 PAGE NO. 1

RCC MATPFA SUBJECT INTERVIEW WITH JOHN REGISTER

- tend toward conservation in keeping of parts
- don't have clear idea of salvage limits
- rely on test to see if serviceable
- precautionary removals many (to eliminate any problems even if they only occur once) especially F-16's flame out controls

problem areas —

- tech data needed to determine if a part is good or bad (tech order)
- rely on experience to determine if a part is
- high part turnover because of conservation
- parts shortages — two year lead times caused
  - procurement problems
  - Bendix propriatory
- reverse engineering — measures

exchange items — bad part goes to warehouse for condemnations or expensive parts

DDB SECTION CODE 5.0 DDB PAGE NO. 030011

ENGINEERING NOTES

EMPLOYEE Prem DATE 7/5/90 PAGE NO. 1

RCC MATPFA SUBJECT TEST STAND # DOWN TIME

- Sorting of test stand historical data (GO 11)

Ideas - ...

1. sort by length of down time (longest first to shortest)

   * this might indicate what problems take the longest to fix and might show a shortage of parts inventory, tools, etc

2. sort by type of failure (problem)

   by doing this type of sort it may be easier to locate the most common type of failure or problem and help to get a general idea of the relative distribution of down time by failure

3. sort by length of down time and use this data to develop a histogram of the frequency distribution of down times.

   (should use ranges instead of discrete values)

DDB SECTION CODE 3.0 DDB PAGE NO.

030067

ENGINEERING NOTES

EMPLOYEE Prema DATE 7/11/90 PAGE NO. 3

RCC MATPFA SUBJECT JOHN REGISTER

OMTR's — agreement

in house documents (process specs) are a possible way to improve process of repair - these can be periodically updated when hard data is refined from material review board

must be careful when writing spec's to ~~make sure~~ avoid excess time wasting

Need to control excess condemnations due to the fact that it's ~~easy~~ easier to install a new part than inspect an old one

— High turnover of tech support

~~[illegible]~~

Need full time manufacturing engineer

DDB SECTION CODE 5.0 DDB PAGE NO.

030013

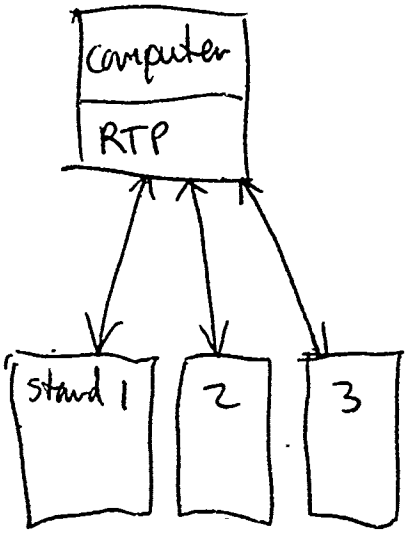
ENGINEERING NOTES

EMPLOYEE Premo DATE 7/12/90 PAGE NO. 1

RCC MATRA SUBJECT TEST STANDS

INTERVIEW WITH Jim Grounds

Overview of test stand operation



- each system is usually made up of 1 computer and interface unit (called RTP), controlling 3 test stands
  - there is usually at least 1 5000z test stand in each system.
- each test stand usually has at least one hydraulic pump
- some stands have more than one pump. (2)
- the pumps are controlled by the computer and are connected to a common feed line
- as test conditions require, the computer turns pumps on and off in order to maintain the needed pressure in the system.
  - the computer also helps control excessive cycling of the pumps to prevent overheating. (this is done by shutting down the pump, (cutting power))
- The RTP serves as the A/D, D/A interface between the stand and the computer

DDB SECTION CODE 3.0 DDB PAGE NO.

030014

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/12/90 PAGE NO. 2

RCC MATPFA SUBJECT TEST STANDS, Jim Grounds

- Computer program is broken down into 2 basic parts

1) part of the code is in machine language - this portion takes care of the basic functions of the computer, (ie data aquisition lower level functions) This part is generally hard to change without a lot of effort, and is configured specially for the hardware RTP.

2) * The rest of the code is higher level code (specialized) that can be changed and manipulated to configure the test stand. test order and procedures, time rates and other functions related to the test procedure can be changed by the maintanence programers.

- One type of problem encountered is the inflexibility of the program to slight variations in the response rates of the various transducers and gauges that are used to monitor the test. This makes it very difficult to replace the transducers unless OEM parts are used. Often these original parts are hard (and/or expensive to obtain)
- often a replacement transducer is outside of a set response window and throws off the test program timing. This problem also occurs with parts such as stepper motors which may have variable response rates.

DDB SECTION CODE 3.0 DDB PAGE NO. 030015

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/12/90 PAGE NO. 3

RCC MATPFA SUBJECT TEST STANDS - J. GROUNDS

- There is also considerable system sensitivity to minor changes such as changing the length of hydraulic lines
  - yet, there appears to be no real software system to routinely take care of these changes without some trial and error.
    - would an overhaul of the higher level program, with changes to calibrate in and account for these changes in transducer response time be worth the effort???

- ~~Summary~~

- The instrumentation system

The instrumentation for the test stands is very complex. There are several components:

- digigages
- thermo couples
- pressure ~~transducers~~ tranducers

- a major source of problems for the instrumentation is the digigages
  - the digigages are essentially seperate units from the computer system. They are especially complex and contain their own signal conditioning and data smoothing

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/12/90 PAGE NO. 4

RCC MIATPPA SUBJECT TEST STANDS - JIM GROUNDS

- because the digi-gages contain their own signal conditioning their response rates cannot be controlled by the computer

- any changes or replacements of the digi gages cause problems unless exact duplicates are installed. This causes a problem because modern replacement gauges typically have faster response rates (they usually have to be slowed down using a trial and error process by installing line restriction or other similar mods.

- There has been an on going process of up grading these digigauges. They are currently working on the 3rd generation of changes for the gages.

- An ideal solution for the digigage problem would be to remove the gages and replace them with simple pressure transducers and then let the computer perform the data smoothing and control the response curves. However, Mr Grounds expressed doubt that this would be possible without major changes to the computer hardware (RTP). Because the hardware is custom designed at the time of manufacture, it is inflexible in regards to changes in transducer configurations.
  - in the above "ideal" solution pressure values would be presented on the CRT screen rather than the digigages

DDB SECTION CODE 3.0 DDB PAGE NO. 030017

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/12/90 PAGE NO. 5

RCC MATPPA SUBJECT TEST STANDS - JIM GROUNDS

- problems with the CRT screens are currently being worked on with a vendor

PUMPS AND PRESSURE REGULATION SYSTEM

- a major source of problems for the pressure system are regulator failures
  - a considerable amount of down time is related to pressure fluctuations or insufficient back pressure. Often the problem might be as simple as a clogged filter or can be as complex as a regulator failure requiring overhaul.
  - a new air filtration system is currently be installed in an attempt to reduce the failures (due to corrosion) in the regulators.
  - because of the large amount of down time due to pressure regulation it might be worthwhile to investigate the effects of a more stringent PM program that would include (possibly) some periodic overhaul of the regulators
    - ~~failure data~~
    - more info about the specific failures in the regulators is needed before making any decisions about PM changes.

DDB SECTION CODE 3.0 DDB PAGE NO. 030018

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/12/90 PAGE NO. 6

RCC MATPPA SUBJECT TEST STANDS - Jim Grounds

CURRENT UPGRADES

- At this time there are several upgrade projects which have either recently been completed or which will soon be completed
  - keyboard - vendor will supply duplicates of the original keyboards (no changes in design, simple replacement)
  - air filters - improved design to try to reduce regulator problems
  - manifold gauges - plumbing change in order to make gauge changes quicker.
  - motor breaker change - new type installed to cause faster tripping in the event of motor failure in order to prevent circuit damages.
  - resolver to digital receiver - this piece of instrumentation is placed in the line between the stand and computer. The new units are capable of faster operation than the old units, and therefore must be "tweaked" to slow them down to match the old units and prevent computer malfunctions.

DDB SECTION CODE 3.0 DDB PAGE NO.

ENGINEERING NOTES

EMPLOYEE Pramo DATE 7/16/90 PAGE NO. 1

RCC MATPPA SUBJECT RE 7/12/90 conversation with Jim Grounds

- A common problem ~~is~~ ~~with~~ causing considerable down time and many test stand failures is burst disc's.

- burst disc's are not necessarily caused by a machine failure

- ~~It~~ the function of the disc's is to act as a safety valve for the hydraulic system of the test stands. They are very similar in function to a safety fuse in an electric circuit. For example, if an outlet pressure (from a VFC) is too great, the disc will burst in order to protect the ~~instrum~~ test stand transducers and instrumentation. This is often caused by the defective VFC's; ~~not~~ a defect in the test stand.

- So, ~~probably~~ when considering down time of a machine, most of the downtime due to burst discs shouldn't be counted as a machine failure

- Mr. Grounds mentioned that at times some operators would "double up" the disc's in order to get a VFC to pass without causing a burst disc (a solution akin to putting a penny in a fuse box) although this doesn't occur any more.

- burst disc's can be replaced by a machine operator which reduces down time (maybe) but may lead (potentially) to the type of situation mentioned above

DDB SECTION CODE 3.0 DDB PAGE NO. 030020

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/18/90 PAGE NO. 1/3

RCC MATPPA SUBJECT Sort II DATA

- The machine historical record will be sorted by ~~~~ Carl Carter (on the VAX) using the following sort~~. criteria.

sort keys

Configuration	Primary	Second	Third
1	des - cost	ass - problem	ass - machine ID#
2	des - downtime	ass - problem	ass - machine ID#
3	ass - problem	ass - machine ID#	des - cost

des ≡ descending ass - assending

- hard copies will be made for each sort configuration
- configuration 1 will be used to find the portion of the problems which cause ~~the~~ most of the costs
- config 2 will be used to find the portion of problems which cause most of the down times
- config 3 will be used to identify the most commor problems (occurance)

DDR SECTION CODE 3.0 DDB PAGE NO. _____

030021

ENGINEERING NOTES

EMPLOYEE Prevo DATE 7/18/90 PAGE NO. 2/3

RCC MATPPA SUBJECT GO 11 DATA, test stands

- Besides improvements already mentioned in previous notes, the following changes might make the GO 11 data more useful and help maint to do a better job

  1) the problem section of the data needs to be standardized and more descriptive

  - A logical way to do this would be to develop a list of potential repairs, each ~~card~~ with its own code. For example, the test stand ~~could~~ be broken down into basic areas (computer, instrumentation, pressure regulation, pumps etc). Each basic area would then be broken down into sub catagories to identify the specific part, each with a unique code or number. And finally there could be a code developed to identify the type of repair performed (replace, remove and repair, repair on machine, adjust, etc).

  - By using a standarged list, a craftsman could quickly access the proper codes for his repair and this information could find its way into ~~the data~~ the current data base (GO 11)

  - Fairly inexpensively, software could be developed to sort or identify problems with the ~~tests~~ test stands on an ongoing basis.

DDB SECTION CODE 3.0 DDB PAGE NO.

030022

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/18/90 PAGE NO. 3/3

RCC MATTPA SUBJECT GO II data, test stands

- This information could be feed to ~~main~~ the proper supervisors ~~in~~ charge of repair and maintenance ~~in~~ a summaried format on a regular basis.

- This information could be used ~~to~~ to track trends in failures and would help in developing a good PM program.

  - problem areas and/or machines could be easily located ~~and~~ by the computer and corrective measures could be taken.

- If needed, ~~there would be a section~~ It would be possible for a craftman to enter additional descriptive wording in addition to the codes. ~~As~~ The present system only allows descriptive wording and no coding. Variances in wording make this section of the repair record very difficult to use without spending huge amounts of time.

- ~~Selection is a suggestion of coding (there are many possible coding methods)~~

DDB SECTION CODE 3.0 DDB PAGE NO. 030023

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/19/90 PAGE NO. 1/3

RCC MATPPA SUBJECT TEST STANDS

DAVID T. BIPPERT 5-3665

Mr. Bippert gave a good general overview of the test stand maint. problems. Following is a summary of our meeting:

- PM is important to keeping the stands ~~operating~~ properly and Mr. Bippert was not opposed to ~~more~~ an ~~in~~ increase in PM. A "trade" of more PM (scheduled) for down time sounds reasonable

- Problems ~~are~~ with the test stand are difficult to diagnose because the UFC and the test stand are designed to work together. Because the stands and UFC ~~are~~ become "one w it" during a test, the exact cause of a problem is not easily isolated. Often this difficulty results in an operator moving a UFC to a different machine and this wastes a considerable amount of time.

- It ~~is~~ is hard to trouble shoot a test stand without a UFC on it without going through a formal calibration process.

- The testing process is almost fully automated. However it would be very difficult to develop a computer program to fully diagnose and/or check a test stand. This is primarily due to the need to have a UFC on the test stand (and fully connected) in order to

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fully test it. There are some diagnostic programs available to test some of the functions of the test stand, but Mr. Bippert feels that these programs aren't believed or used by the operators very much.

- Bippert suggested a team of two experts, (one on the stand and one on UFC's) be used when there is a problem with a UFC on a test stand. In those cases where the stand is suspect (not working properly) this team of experts would be called in to brainstorm the cause of the problem and save time

- Test stand operators have a tendency to disbelieve their test stand. For example, an operator may repeat a test many times in an attempt to sell a UFC, even though the automatic test program advises otherwise. The operator resists taking the UFC apart once he has it on the stand.

- Many of the adjusting screws (on the UFC's) are very sensitive and hard to adjust. In addition, it is very critical that the initial set-ins are done correctly on the UFC before mating. If the setins are incorrect, it becomes very difficult to correct the mistake with the external settings on the UFC. Perhaps more stringent specs on the initial setins would help prevent future problems with the UFC's during testing.

ENGINEERING NOTES

EMPLOYEE Premo DATE 7/19/90 PAGE NO. 3/3

RCC MATPFA SUBJECT Test Stands - Bigpent

One of the most common test stand failure problems is related to back pressure. Often back pressure will be out of limits (BPOOL)

There are 6 back pressure channels on each test stand

Most BPOOL problems are caused by dirty filters or contaminated needle valves

More frequent filter changes might reduce downtime. RAR tests cause a large number of BPOOL problems and clogged filters on the stands which run a lot of these tests.

- TO's are inaccurate and are difficult to use if they are followed exactly in the testing process. They are difficult and time consuming to change. (years)

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ENGINEERING NOTES

EMPLOYEE Premo DATE 7/20/90 PAGE NO. 1

RCC MATPFA SUBJECT Test Stands - Jim Grounds

Most software for UFC testing has been debugged. Most tests are done in the automated mode. However, there is some operator discretion as to how many tests should be rerun, given a failure. An operator can select any of 9 different tests.

There have been minor changes to the testing software for most tests, except for the SAT test which hasn't been messed with. The RAR (run as received) test hasn't been consistant (the procedure has been changed and the test implemented differently.)

An artificial intelligence program had been developed to help the craftsman with the RAR test but it has not been utilized.

The bladder portions of the test stands are linked to pressure problems and might be a good candidate for increased PM attention.

- Similar to what David Bippert had mentioned in an earlier conversation with us, the test stand operators and supervision have less confidence in the test stands than they might. Test Stand calibrations are often "checked" using a "gold plated standard" (an accepted good UFC.)

ROY EVANS - PM guru

DDB SECTION CODE 3.0 DDB PAGE NO. 030027

ENGINEERING NOTES

EMPLOYEE Sadie McFarland DATE 6-27 PAGE NO. _____

RCC MATSFA SUBJECT Equipment test stands log

The log book is kept to status the test stands. Entry is made every two hours.

Each area has a seperate page but all are in the same book. A new book is started each month.

Question: what does yellow high light on log entry

Answer: trouble with test stand

Question: what does spud 667 mean

* answer: _____

Question: ASI turn on

answer:

DDB SECTION CODE 3.0 DDB PAGE NO. _____

030028

ENGINEERING NOTES

EMPLOYEE L. M. Farland DATE 6-28 PAGE NO. _____

RCC MATPFA SUBJECT Equipment

The May 1990 is being input to a Excel spread sheet. (by our Key person). Each area will be put on a different spread sheet. The data can then be sorted many different ways to get information.

Question: can items be moved from a test stand in one area to a test stand in another area. or just moved between test stands (in case a test stand goes down or the required test stand is unavailable

Answer: Yes - items can be moved -

GG - Gas Generator

RAR - Run as received

SAT - Service acceptable Test

MATRIX - >

ASI - Auggie set in

PI & I -

coming off/on - ready to to be placed on or to be Taken off the test stand

plumbed - Units being connected to test stand.

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030029

ENGINEERING NOTES

EMPLOYEE S. McFarland DATE 6-29-1 PAGE NO. _____

RCC MATPFA SUBJECT Equipment T/S

power outages etc cause data loss on test stands causing tests to be repeated.
• need more data / information

(overall) repair operators do not work overtime need augie set ins why not have 6-8 mech work OT. to get the Augmentors ready to be tested

Each test stand has its own program. As the tests are completed they are printed. When completed the operator stamps & initials each paragraph.

unit is placed on the T/S, plumbed in. then the computer runs the test sequence, giving instructions to operator, waits for response or an adjustment to be made. The operator can stop the test if a problem develops that can not be corrected without removing the item from the T/S

The 50002 test stands can perform required test on almost all units. (There are a few sub-sub-Assembly tests that require another test stand).

50005 test DB, Augie set in (computer mated to Augmentor. Adjustments are made then only fine tuning is done on Unified testing.

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030070

ENGINEERING NOTES

EMPLOYEE S. McFarland DATE 4-29-2 PAGE NO. _____

RCC MATPFA SUBJECT Equipment / T/s

The 173 test sub-subassemblys. There are are approximatly 30 possible different assemblies, requiring about 45 min each.

Some sub-subassy must be replaced on unit it was removed from, others are interchangable. Testing on pre flow items are as required.

Major components, (4-6) bas generator, Distribution body (DB), computer can be mismatched - ie reassembled with sub-units with different serial numbers. - note this is done very seldom - only 3 times in five years.

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030031

ENGINEERING NOTES

EMPLOYEE Harris DATE _____ PAGE NO. 2

RCC _____ SUBJECT _____

S0173 AND S0175 TEST STANDS

INTERVIEWS WERE CONDUCTED WITH S0173 AND S0175 OPERATORS REGARDING BASIC TEST STAND PROCESSES, ESTIMATED TIMES, AND WORKLOAD OCCURRENCE FACTORS. THE TWO OBVIOUS TESTED PARTS ON THE S0173 ARE THE PLA BRACKET AND THE AUGMENTOR COMPUTER. THE SET-UP TIMES ARE TYPICALLY .75 HOURS WITH TEST TIMES AVERAGING APPROXIMATELY 4 TO 8 HOURS FOR THE PLA BRACKET AND AUGMENTOR, RESPECTIVELY. THE S0175 TEST STAND OPERATOR INDICATED THAT FOUR SPECIFIC TASK CODES ON TRACKER CONSISTED OF APPROXIMATELY 80% THE WORKLOAD (326, MANIFOLD FILL SENSOR; 321, PB ACTUATOR/LEAKAGE; 331, PLA BRACKET; AND 332, THE IGNITION WIRING HARNESS). SPECIFIC SET-UP AND TEST TIMES WERE GIVEN FOR EACH TASK AND WERE MERGED TO OBTAIN A WEIGHTED AVERAGE.

ONE ISSUE WHICH WILL BE EXAMINED DURING EXPERIMENTATION WILL BE WHAT EFFECT WILL OCCUR BY HAVING A LOWER WAGE-GRADE OPERATOR PERFORM THE SET-UP AND INSTALLATION FOR THE TEST ITEMS. (THIS ACTION ITEM WOULD APPLY NOT ONLY TO THE S0173 AND S0175 STANDS, BUT ALSO THE S0002, S0004, AND S0005 STANDS). BY ALLOWING HIGHER SKILLED PERSONNEL TO CONCENTRATE SPECIFICALLY ON TEST OPERATIONS, THE POSSIBILITY COULD EXIST TO OBTAIN HIGHER THROUGHPUT.

S0004 STAND

THE S0004 TEST STAND IS DEDICATED SPECIFICALLY FOR GAS GENERATORS. 28 TEST POINTS ARE REQUIRED FOR A COMPLETE TEST RUN ON A GAS GENERATOR, AND A SMALL RUN ON A GG REQUIRES ONLY 5-6 TEST POINTS. THE MOST SIGNIFICANT PROBLEM NOTED FOR TESTING IS THE SPEED RECEIVER CALIBRATION. ANOTHER ISSUE CONCERNS OPERATOR TRAINING AND SKILL. OPERATORS VARY IN TERMS OF WHAT TECHNIQUES THEY KNOW CONCERNING OPERATION OF THE STAND. THIS SITUATION CAN OBVIOUSLY AFFECT VARIABILITY OF OPERATION TIME AND TO AN EXTENT QUALITY OF THE WORK PERFORMED. AN EFFORT TO STANDARDIZE THE OPERATION GIVEN "OPTIMAL" TECHNIQUES DEVELOPED BY OPERATORS MIGHT ENHANCE THE PROCESS FLOW.

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030052

ENGINEERING NOTES

EMPLOYEE Harris DATE _____ PAGE NO. 3

RCC _____ SUBJECT _____

S0002 STAND

THE S0002 STAND IS THE MOST SIMPLE STAND IN THE UFC PROCESS, ANY TEST REQUIRED FOR THE UFC CAN BE ACCOMPLISHED EXCEPT FOR GAS GENERATOR TESTING. A "TYPICAL" RUN AS RECEIVED (RAR) CAN REQUIRE APPROXIMATELY 51 STEPS WHILE AN ALIGNMENT SET-IN (ASI) REQUIRES 49 STEPS. 33 TEST STANDS ARE S0002 AND ARE LOCATED IN AREAS B AND D.

A BIG PROBLEM INDICATED BY THE OPERATORS CONCERNS THE DIGITAL GAUGES. MORE PROBLEMS OCCUR FREQUENTLY WITH THE GAUGES THAN ANY OTHER ITEM. SEVERAL STANDS CAN BE CONNECTED TO ONE PUMP, WITH THE RESULT THAT THE ENTIRE COULD FAIL IF A PROBLEM DEVELOPS WITH ONE OF THE STANDS. IT IS UNCERTAIN WHETHER THE MODEL WILL BE AFFECTED BY THIS CONSTRAINT.

ALTHOUGH THE S0002 IS CAPABLE OF PERFORMING MANY DIFFERENT TESTS, PRELIMINARY OBSERVATIONS CONCERNING OPTIMAL USE OF THE STANDS IS SOMEWHAT UNCLEAR. MODELERS SHOULD DETERMINE IF THE S0002 SHOULD BE USED SPECIFICALLY FOR END-OF-PROCESS TESTS.

GAS GENERATOR

OF THE 56 TASKS ASSIGNED FOR THE GAS GENERATOR WORK, APPROXIMATELY 11 OPERATIONS DETERMINE THE 80% WORKLOAD FOR THE SECTION. THE PRIMARY OPERATIONS ARE REMOVING AND INSTALLING COMPUTERS AND LINES, UNLOADING LEVERS, LOCKING, SHIMMING AND SAFETY WIRES, AND GOVERNOR CAM SHAFT. A DISCRETE DISTRIBUTION WAS ASSIGNED TO THESE DETERMINED SETS OF OPERATIONS FOR THE OVERALL GAS GENERATOR REPAIR.

ONE OF THE PROBLEMS ENCOUNTERED IN THE UNIT CONCERNS INSTRUCTION MISUNDERSTANDING AS TO WHAT THE PROBLEM ACTUALLY IS WITH THE GAS GENERATOR. IN ORDER TO CORRECT THIS SITUATION, A FEW CROSS-TRAINED TEST STAND AND 66 MECHANICS WORK ON DIFFICULT DETERMINATIONS AND HELP FACILITATE THE PROBLEM. THE METHOD HAS ENJOYED SOME SUCCESS.

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030033

ENGINEERING NOTES

EMPLOYEE GARDNER DATE _____ PAGE NO. 1

RCC MATPFA SUBJECT Test Stand Down Time

Off site maintenance reports the availability of UFC test stands as very high (over 98% across the past year). Our analysis of maintenance data records (GOII) confirms this high average availability but also shows some additional considerations.

The test stands show a very high rate of unscheduled failure. The maintenance down time for these failures is very small however, so the average availability figure is quite high. An examination of the labor & mat'ls costs per maintenance action show that less than 5% of the jobs incur a mat'l cost. This figure is probably skewed by bench stocks of common-failure items (Burst disks or filters/ small fittings & seals) which are not ordered on a per-job basis. It is also possibly corrupt if parts are not always ordered against the job that requires them (this can happen if there is more than one maintenance job open). My expectation, however, is that most of these maintenance jobs are for adjustments only. These stands are "Twitchy" and require frequent adjustment to stay within specs. The single greatest offender appears to be "Back Pressure Out of Limits" followed by burst disks. The Back pressure problem can have a variety of causes - we are still trying to identify any trends there. Sean Crosby (our fuel systems Test stand engineer) suspects that the burst disks are routinely operating too near their burst point. This causes degredation of the disk and may be causing an unnecessarily high rate of failure. Sean is trying to locate another disk that will be more robust. He is also looking into the possibility of a by pass valve that could be reset

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030054

ENGINEERING NOTES

EMPLOYEE GARDNER DATE _____ PAGE NO. 2

RCC MATRA SUBJECT Test Stand Down time

by the T/S operators.

Examination of T/S log books and interviews with production indicate that the impact on UFC production flowtimes of unscheduled downtime is substantially greater than just the actual test stand down time. When a stand goes down, the UFC production people are frequently required to de-plumb & remove the UFC under test and re-install it later, after the stand is repaired. They must then restart the test at the beginning (if the stand was malfunctioning, the test results are invalid), losing all time invested to date. There is also a tendency (given the shortage of T/S operators) for a UFC to "lose" its operator for other duties. This means the UFC sits for at least one shift. This increases the flowtime & WIP levels in the RCC.

While we have not completed a statistical analysis of the log book data, I suspect that an unscheduled T/S failure generates a production delay of 3-8 hours on the average. We plan to model this by using the production downtime as a Mean Time To Repair (MTTR) figure for the test stands rather than the MTTR generated using off-site maintenance data. This should provide a more realistic evaluation of equipment-generated delays in the UFC process.

One area of potential improvement appears to be in scheduled preventive maintenance. There is currently a fairly extensive PM schedule on the test stands by Jim Grounds tells me that only

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030035

ENGINEERING NOTES

EMPLOYEE GARDNER DATE _____ PAGE NO. 3

RCC MATRA SUBJECT Test Stand down time

the 180 calibration/PM is actually performed. An analysis of the # of maintenance calls for a 180 day period (a year's worth of data, normalized to reflect the fact that each 5002 T/S is calibrated at a different time) shows that unscheduled maint. calls increase by about 20% across the 180 day period. If off-site could perform more frequent PM the could reduce average # unscheduled maint. calls by about 20% This would mean production would experience fewer delays but would have to schedule more downtime for PM.

We are currently trying to develop a recommended PM schedule to accomplish this.

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ENGINEERING NOTES

EMPLOYEE GARDNER DATE 26 July 90 PAGE NO. 1

RCC MATTFIT SUBJECT Preventive Maint. of UFC Test Stands

Interview Mr Roy Evans (MATEA) and Dave Clark (Hamilton STNDRD) regarding Preventive Maintenance (PM) on the UFC test stands. Mr Evans concurs that a more aggressive PM schedule would reduce the instance of unscheduled downtime on the stands. He has already made considerable progress in this area himself. By increasing the scope of the current PM/scheduled maintenance operation and instituting a twice-weekly fluid level check, he estimates that his team has reduced the average unscheduled failure rate by 4.5 failures per day. This is a significant improvement and indicates to me that a Reliability Centered Maintenance (RCM) program would produce even better results. Will recommend as Quick Fix

Mr Evan's team is allocated 32 positions for WG-12 electronic Repair Technicians, but he is only able to fill 7. These 7 skilled technicians are augmented by WG-5 helpers and some loanins from other areas. The large percentage of semi/un-skilled technicians puts substantial strain on Mr Evan's ability to perform unscheduled maintenance. Only the skilled workers can troubleshoot diagnose & repair failures on the test equipment, but each skilled worker can supervise the work of several helpers performing scheduled/PM. Mr Evans has structured his workforce schedules to take advantage of this - using WG-5s to top-off fluid levels for example. This situation means that unscheduled maint. (failures) have a significant impact on his efficiency. He estimates that every hour of unscheduled downtime on a stand costs him 2-3 skilled man hours. Failures are a serious headache for him but PM is relatively easy to handle.

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030057

ENGINEERING NOTES

EMPLOYEE GARDNER DATE 26 July 90 PAGE NO. 2

RCC MATFA SUBJECT PM on UFC Test Stands

Mr Evans also credited ~~[illegible]~~ the fact that his group was working a stricter PM schedule with helping relieve the parts problems experienced in the past. By inspecting parts more often/regularly they have been generating a steadier demand on the supply system and have been able to better predict future spares requirements. He has also forbidden his technicians to swap parts between stands. He feels that the spare/replacement part situation is better now than at any time in the past. This is significant, as the test stands are already several years past their originally-planned life span and are scheduled for retention through the year 2005. RCM or a similar PM plan will be vital if these stands are expected to continue to support production.

Mr Evans pointed out that many of the failures are caused by foreign matter in the fluid. This situation frequently produces Back Pressure out of Limits problems (13.7% of all failures) ~~[illegible]~~ or Burst disks (7% of all failures). The primary source of this foreign matter is the UFC under test. He recommended that each UFC be flushed out before ~~[illegible]~~ testing. The most critical contributor to this situation was UFCs undergoing Run As Received (RAR) tests, prior to repair. This test is at the beginning of the UFC OCM repair process and involves running the UFC at its incoming condition - normally full of crud from the field.

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ENGINEERING NOTES

EMPLOYEE Gardner DATE 26 July 90 PAGE NO. 3

RCC MATPFIT SUBJECT PM on UFC Test Stands

Those stands used most frequently for RARs show a higher instance of fluid pressure related failures than the average. These stands should receive more frequent PM than others. I asked Mr Evans what would be the effect of dedicating certain stands to RAR only. He indicated that failure rates on the RAR stands would substantially increase while failure rates on the other stands would decrease proportionately. The RAR stands could then be scheduled for heavier PM and total failures reduced significantly.

This would be an excellent idea if it could be made to work. The RAR is at the beginning of the process and does not need significant excess capacity to maintain production (per The Goal). The RAR is also not a calibration-critical test so calibration requirements would be less stringent for the RAR test stands. The SAT test, on the other hand, is at the end of the process, so it needs more spare capacity than any other operation & it represents final sell-off standards so it needs the tightest calibration available. This looks like a great potential QF but needs to be run on the model.

Could the RAR stands be fitted w/ a pre-stand filter?

Mr Evans feels that 99% of all t disks are caused by operator error. He thinks the operators need more/better training. Will Ask Dr Majoros to look into this.

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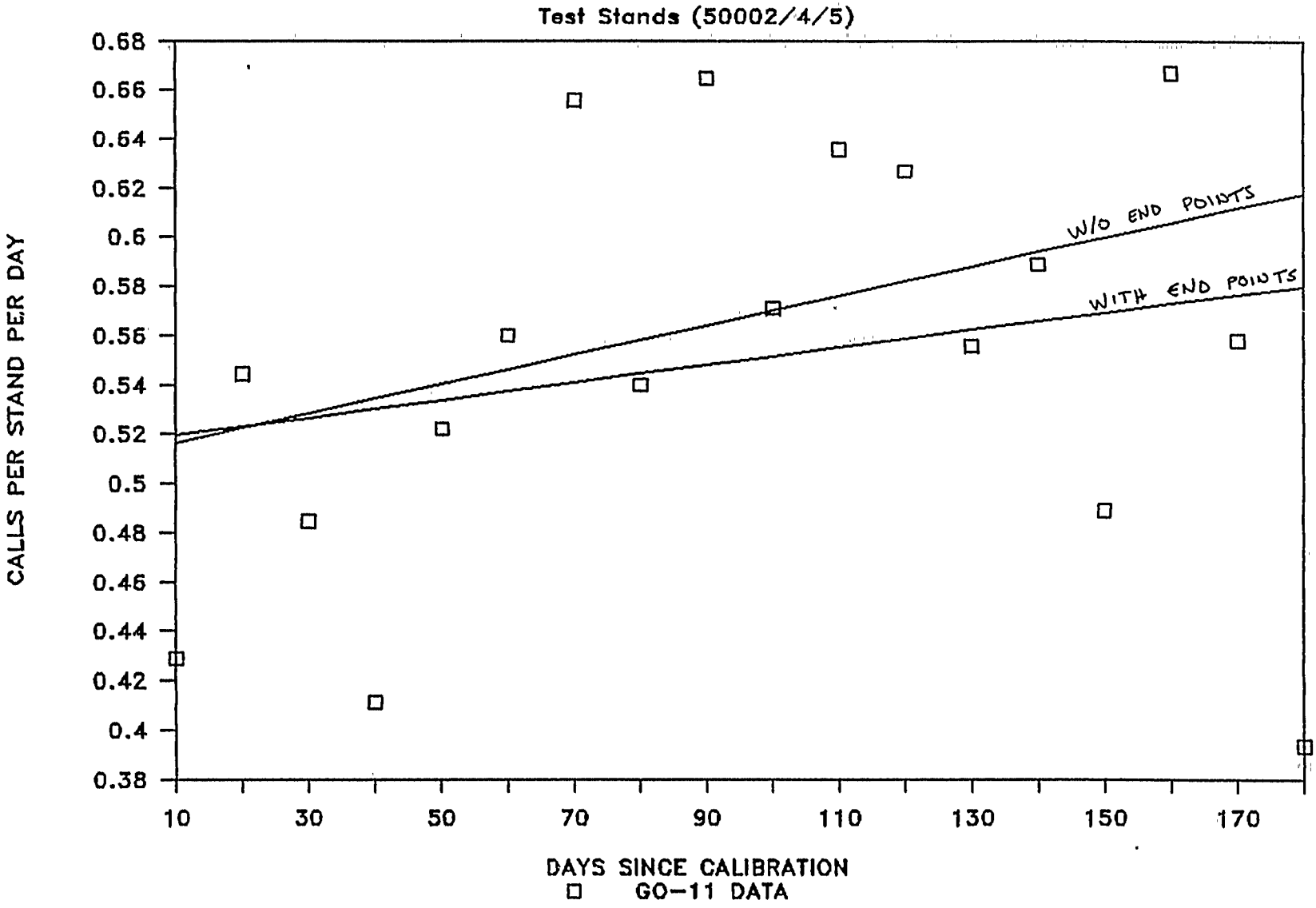
030059

10

0300040

MAINT. CALLS OVER 180 DAY CAL. CYCLE



x-axis ↓ data points ↓ line ↓

	Days	Calls/dy	c-fit	c-fit w/o end pts.
1	10	0.429	0.520	0.517
11	20	0.544	0.523	0.523
21	30	0.484	0.527	0.528
	40	0.411	0.530	0.534
etc	50	0.522	0.534	0.540
	60	0.560	0.537	0.546
	70	0.656	0.541	0.552
	80	0.540	0.544	0.558
	90	0.664	0.548	0.564
	100	0.571	0.552	0.570
	110	0.636	0.555	0.576
	120	0.627	0.559	0.582
	130	0.556	0.562	0.588
	140	0.589	0.566	0.594
	150	0.489	0.569	0.600
	160	0.667	0.573	0.606
	170	0.558	0.576	0.612
	180	0.393	0.580	0.618

Regression Output:

Constant	0.510611	
Std Err of Y Est	0.068001	
R Squared	0.156533	0.395643
No. of Observations	16	
Degrees of Freedom	14	
X Coefficient(s)	0.000594	
Std Err of Coef.	0.000368	

} without end points

Regression Output:

Constant	0.516049	
Std Err of Y Est	0.084607	
R Squared	0.050551	0.224836
No. of Observations	18	
Degrees of Freedom	16	
X Coefficient(s)	0.000354	
Std Err of Coef.	0.000384	

} with end points

Note: this is average data for 45 test stands and is derived from GO-11 data. Type 500002/4/5 test stands are included. Stand #'s 4458, 4484, 4485, and 4486 are not included due to bad data.

ENGINEERING NOTES

EMPLOYEE Parker DATE 26 June 90 PAGE NO. _____

RCC MATPFH SUBJECT Equipment Maint.

Tuesday - 6/26/90

Ms. Henderson and I went to meet with Jim Grounds and Roy Evans today. We discussed some of the equipment maintenance problems, both past and present, which Mr. Grounds has experienced. One of the most significant problems he faced when he first entered this area was the fact that his predecessors did not schedule down time for test stands undergoing preventive maintenance (PM). Since most of the UFC testing equipment is placed in systems of two or more interlinked machines, this meant that test equipment in several systems could be down at any one time. This is naturally unacceptable due to the impact on UFC production. Mr. Grounds has since scheduled the preventive maintenance such that only one system will be down at any one time. I was able to obtain the preventive maintenance data for the various systems, which is basically every 180 days for a duration of 40 hours, performed exclusively on first shift, Monday through Friday. Most of the work performed during this maintenance is calibration, although some inspection and cleaning is also performed. The attachments following this page are the identifiers for the test equipment. as well as the systems in which they reside, and their individual PM data. The attachments are designated by the letter "B".

As we were unable to meet with Roy Evans, we went to see Mr. Manzetti, with whom Ms. Henderson wished to speak in relation to obtaining the printouts for determining down time by machine as well as mean time between failures (MTTR). Mr. Manzetti was on leave, but we left a list of the information we wished collected with Chris Borac, who works for Mr. Manzetti. I will pick up this data tomorrow.

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K's from Merrily Henderson 19/6/90

ACFCM (2) MATPFA (2) MAW (1) DIRECT LABOR SUMMARY REPORT SA-ALC DATE 06-18-90 A-G037G-FD2-D2-8F 173

RCC: MATPFA

DUTY CODE	SKILL CODE	SPEC PROJ	INDIRECT FACTOR BUDGET	INDIRECT FACTOR ACTUAL	CURRENT DAY ACTUAL HOURS REGULAR	CURRENT DAY ACTUAL HOURS OVERTIME	CURRENT DAY ACTUAL HOURS HOLIDAY	CURRENT DAY ACTUAL HOURS TOTAL	MONTH TO DATE ACTUAL HOURS REGULAR	MONTH TO DATE ACTUAL HOURS OVERTIME	MONTH TO DATE ACTUAL HOURS HOLIDAY	MONTH TO DATE ACTUAL HOURS TOTAL	EARNED HOURS	% EFF
													8.0	
11	DA				270.0			270.0	3629.0	798.2		4427.2	5562.5	125.6
11	HB				883.0	12.0		895.0	7399.0	2298.3		9697.3	15180.5	156.5
11	HF				1153.0	12.0		1165.0	11028.0	3096.5		14124.5	20751.0	146.9
DUTY CODE TOTALS														
CLASS SUB TOTALS					1153.0	12.0		1165.0	11028.0	3096.5		14124.5	20751.0	146.9
DIRECT TOTALS					1153.0	12.0		1165.0	11028.0	3096.5		14124.5	20751.0	146.9
	21		10.9	11.8	56.0			56.0	1447.0	219.2		1666.2	2261.9	135.8
	22		1.4	1.4	8.0			8.0	193.0			193.0	290.5	150.5
	24		1.8	1.8					232.0			232.0	373.5	161.0
	26		2.6	2.6					372.0			372.0	539.5	145.0
	27		12.1	15.7	88.0			88.0	2213.0	219.2		2213.0	2510.9	113.5
INDIRECT TOTALS					160.0			160.0	4457.0	219.2		4676.2	5976.3	127.8
	31		10.4	12.1	123.0			123.0	1708.5			1708.5	2168.1	126.9
	32		3.8	3.6	4.0			4.0	505.5			505.5	747.0	147.8
	33		0.5	3.7	64.0			64.0	520.0			520.0	103.8	20.0
CIV LEAVE TOTALS					191.0			191.0	2731.0			2731.0	3008.9	110.2
RCC LEAVE TOTALS					191.0			191.0	2731.0			2731.0	3008.9	110.2
RCC TOTALS					1504.0	12.0		1516.0	18216.0	3315.7		21531.7	29736.2	138.1
MEMO ENTRIES									88.0			88.0		
39														
SPECIAL PROJECTS														
11		04							602.0			602.0		
27		04			88.0			88.0	272.0			272.0		
33		45			56.0			56.0	498.0			498.0		
33		47			8.0			8.0	24.0			24.0		
39		78							88.0			88.0		

Note - This report gives hours but not quant. of workers in particular tasks. Can't determine

(512) 482-9600

Km 1222

0300/3

Attachment 4

ENGINEERING NOTES

EMPLOYEE Parker DATE 6 PAGE NO. 2

RCC MATPFA SUBJECT Equipment

Wednesday - 6/27/90

I went with Ms. Henderson to meet with Roy Evans, who is the supervisor and dispatcher for the test stand maintenance crews. Mr. Evans talked to us in relation to how test stand problems are reported and work crews are dispatched. Apparently, the problems are called into his shop, where they are entered into a log book along with the time that the call is received. Work crews are then dispatched to the UFC testing areas. I was impressed that the crews are dispatched almost immediately. Both Mr. Grounds and Mr. Evans appear very serious about their stated belief that the UFC area is their customer, and customer satisfaction comes first. This is important to us, as it will help in determining the actual down time of the equipment. This will be further aided by the fact that the UFC test stand operator must sign off on the work order upon completion of the maintenance. The only piece of data not covered in the maintenance log book is the amount of time from when the test stand went down to when it was called in. While we would assume this to be a fairly small period of time, we can check on the actual failures by referring to the test stand log books, which are kept by the operators.

We went to Manzetti's area and picked up the printouts on MTTR and MTBF. While configuring the data represented in these reports to our specific needs will be labor intensive, I feel more confident about the data integrity now that I know how the checks and balances on the collection and reporting system work.

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ENGINEERING NOTES

EMPLOYEE Gardner DATE 25 Sept 90 PAGE NO. 1

RCC MATTFA SUBJECT Equipment Maint. History

The following sheets show the # of unscheduled maintenance calls (from the GP 11) for Each test stand from 1 July 89 - 1 July 90. The breakdown is as follows:

Stand #	Stand Type
44 XX	50002
45 XX	50004
43 XX	5005

No obvious statistical trends or patterns. Variation in # of calls per stand (by type) varies by usage. ie: 11 stands are currently down for a blown bus bar.

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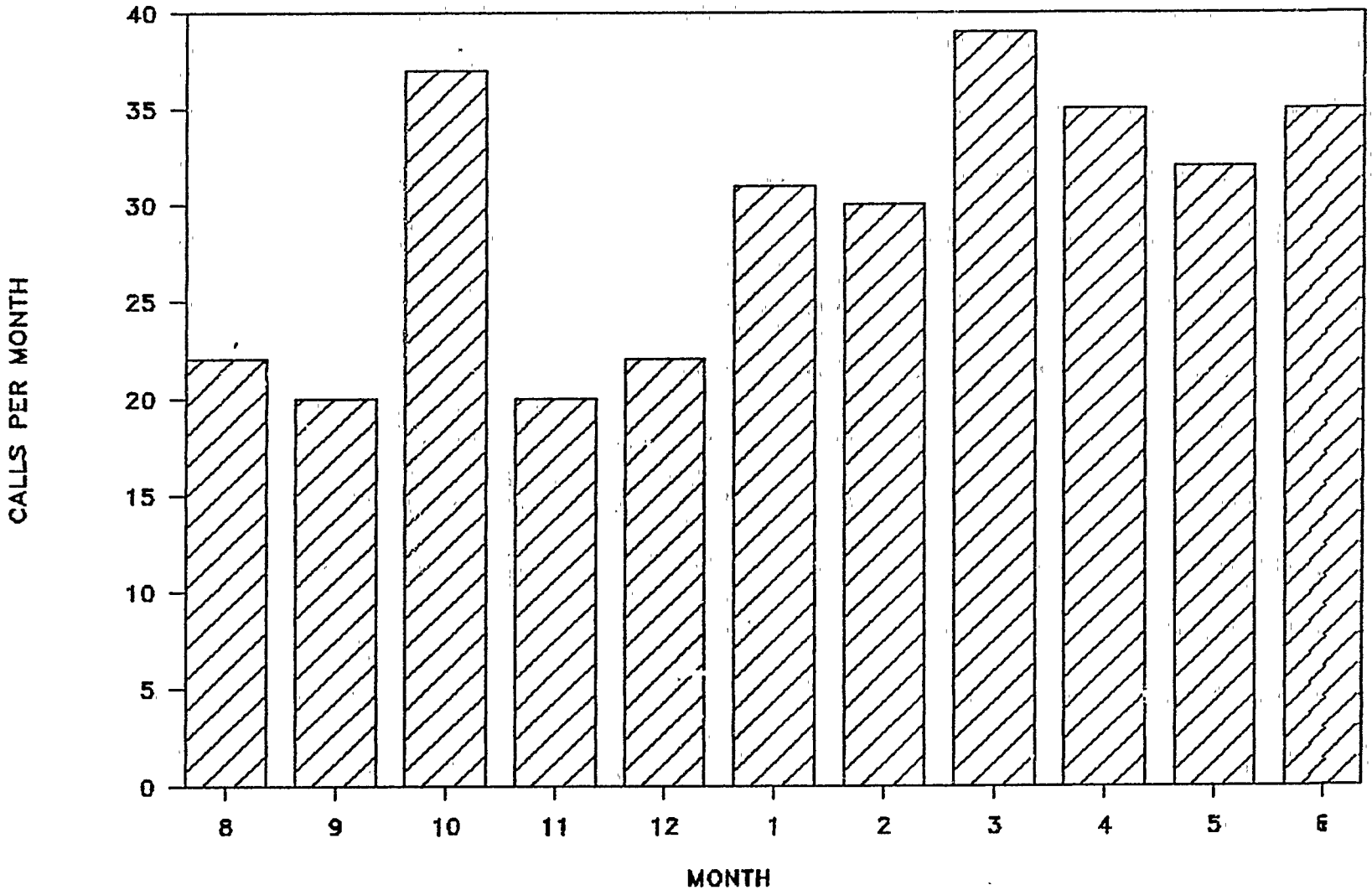
030045

/44

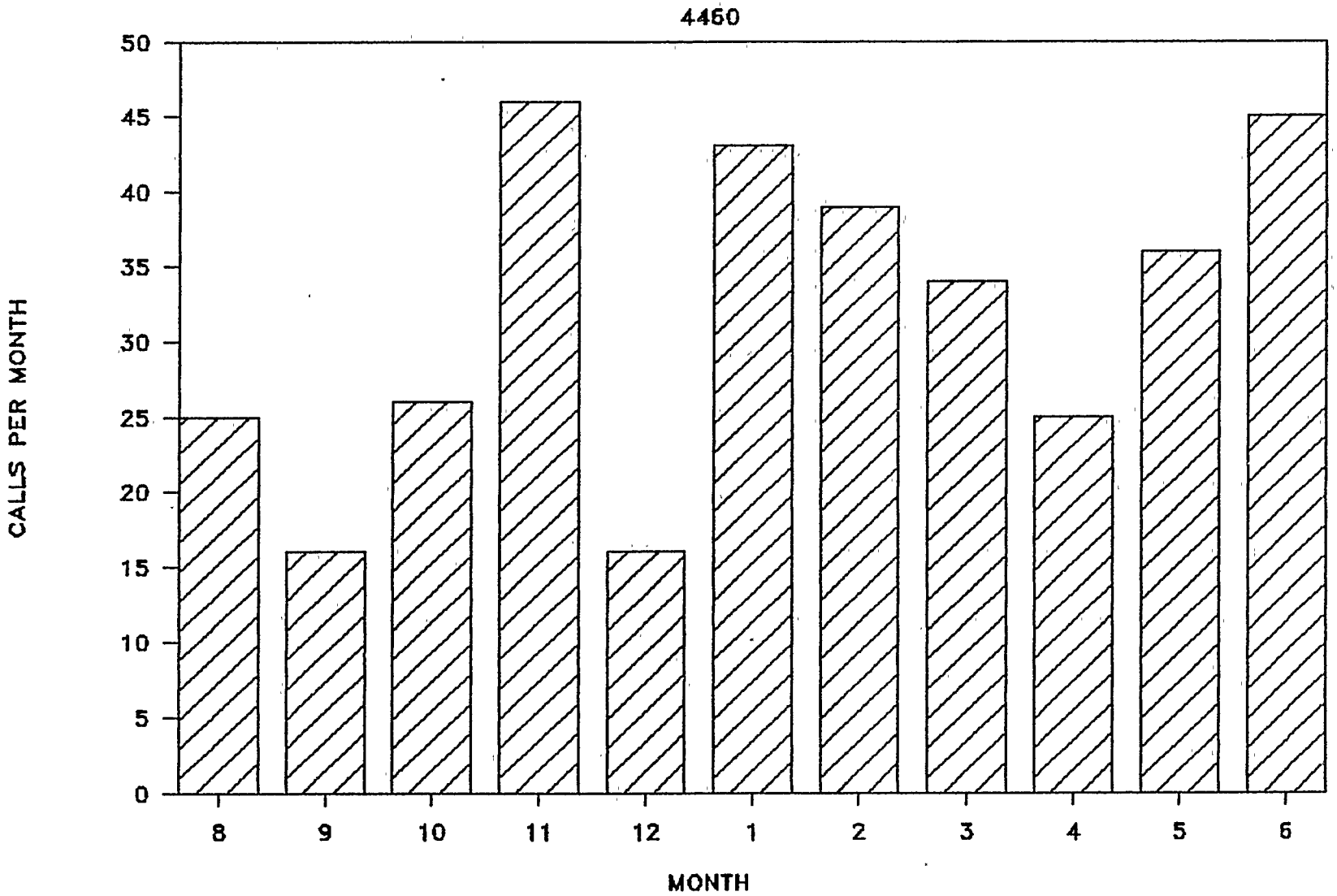
030046

MAINT. CALLS (1989/90)

4459



MAINT. CALLS (1989/90)



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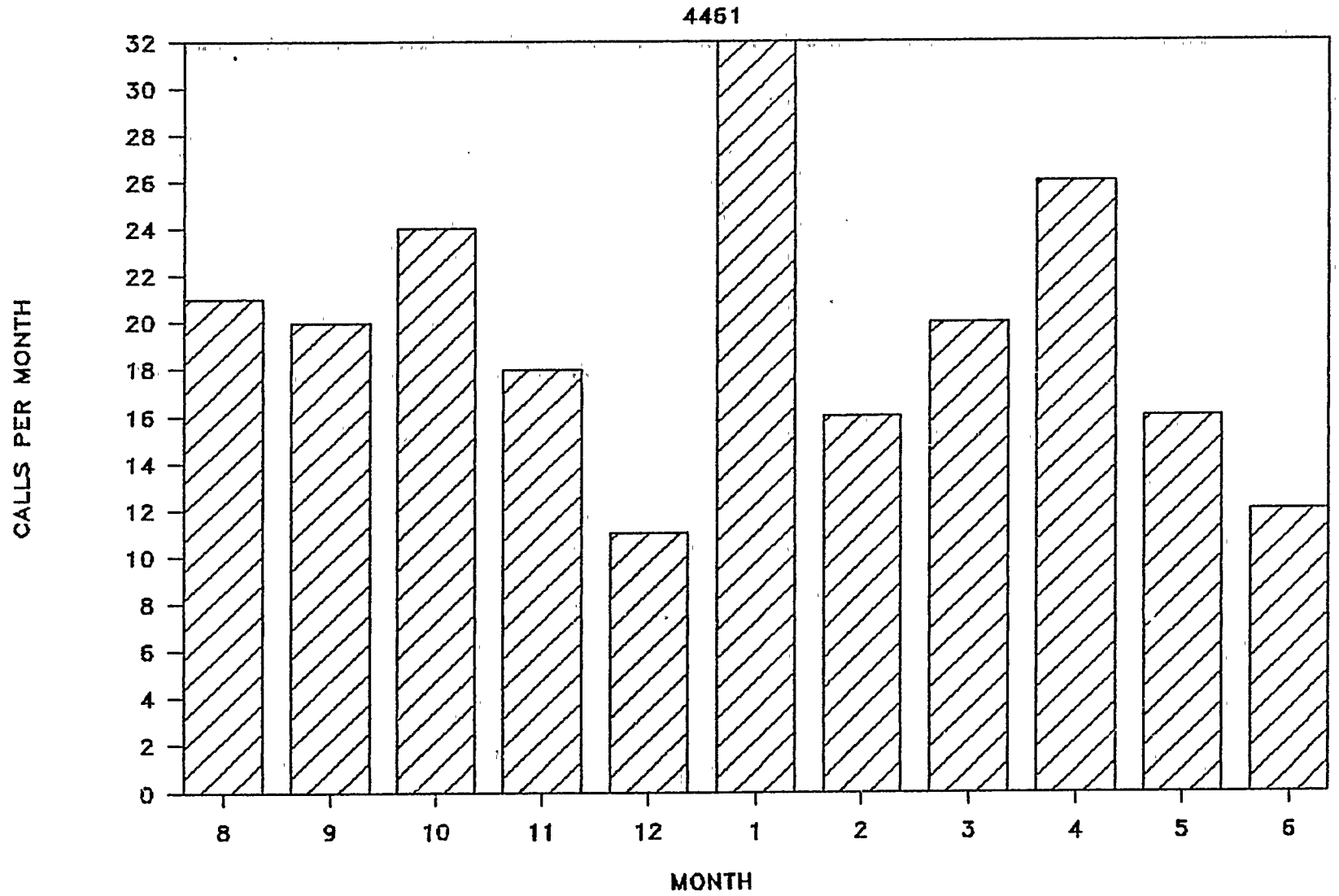

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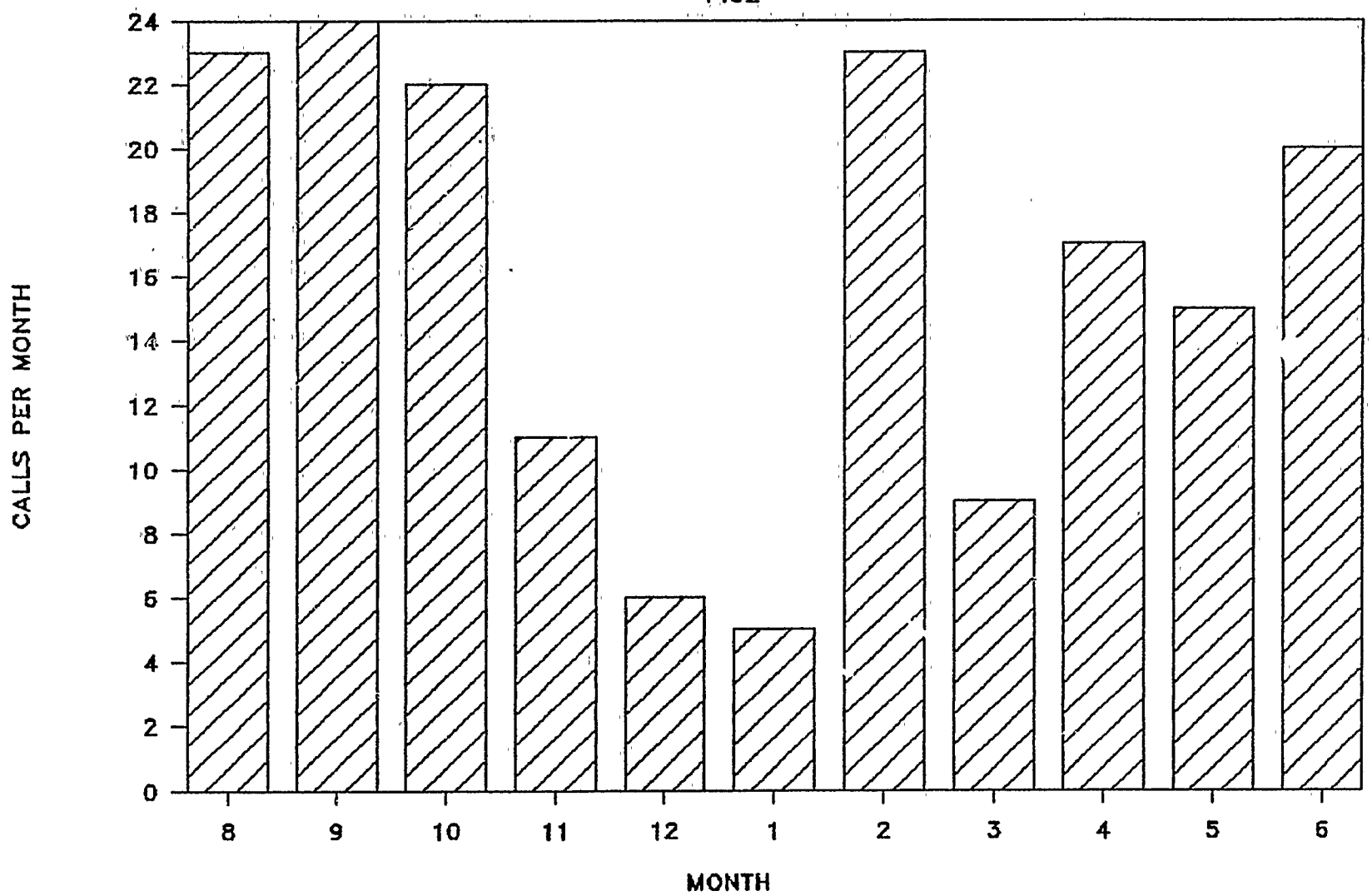

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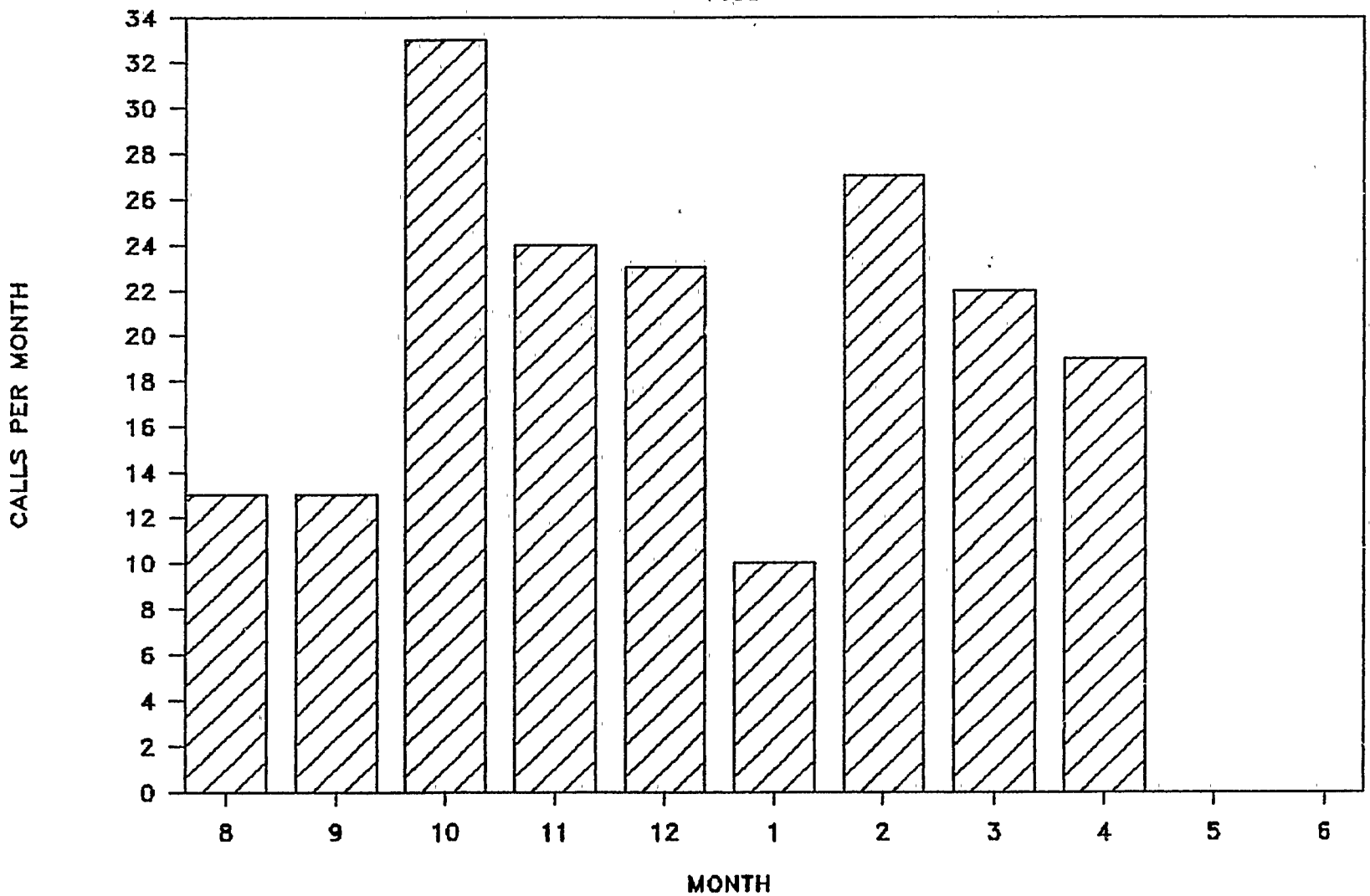

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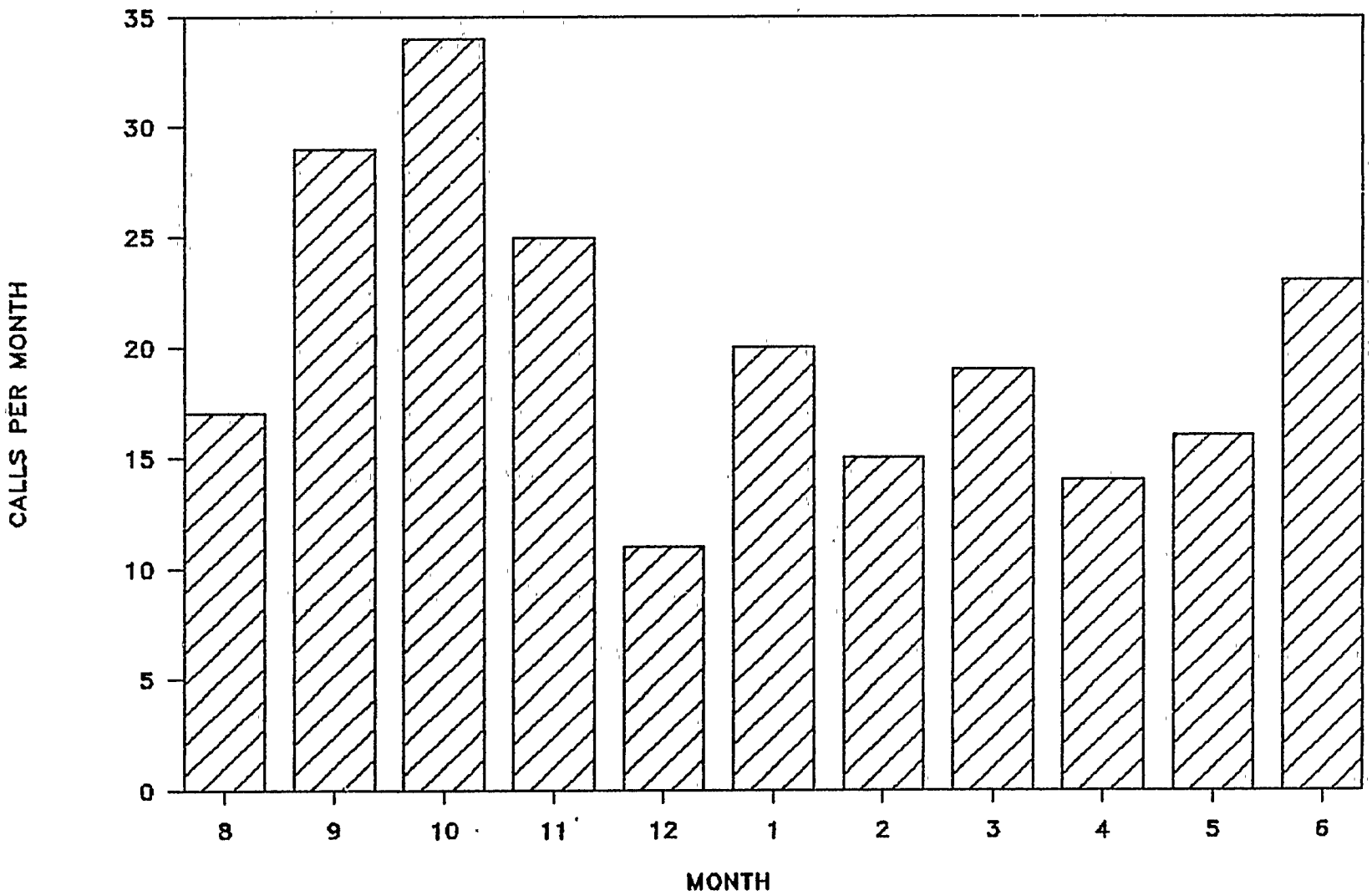

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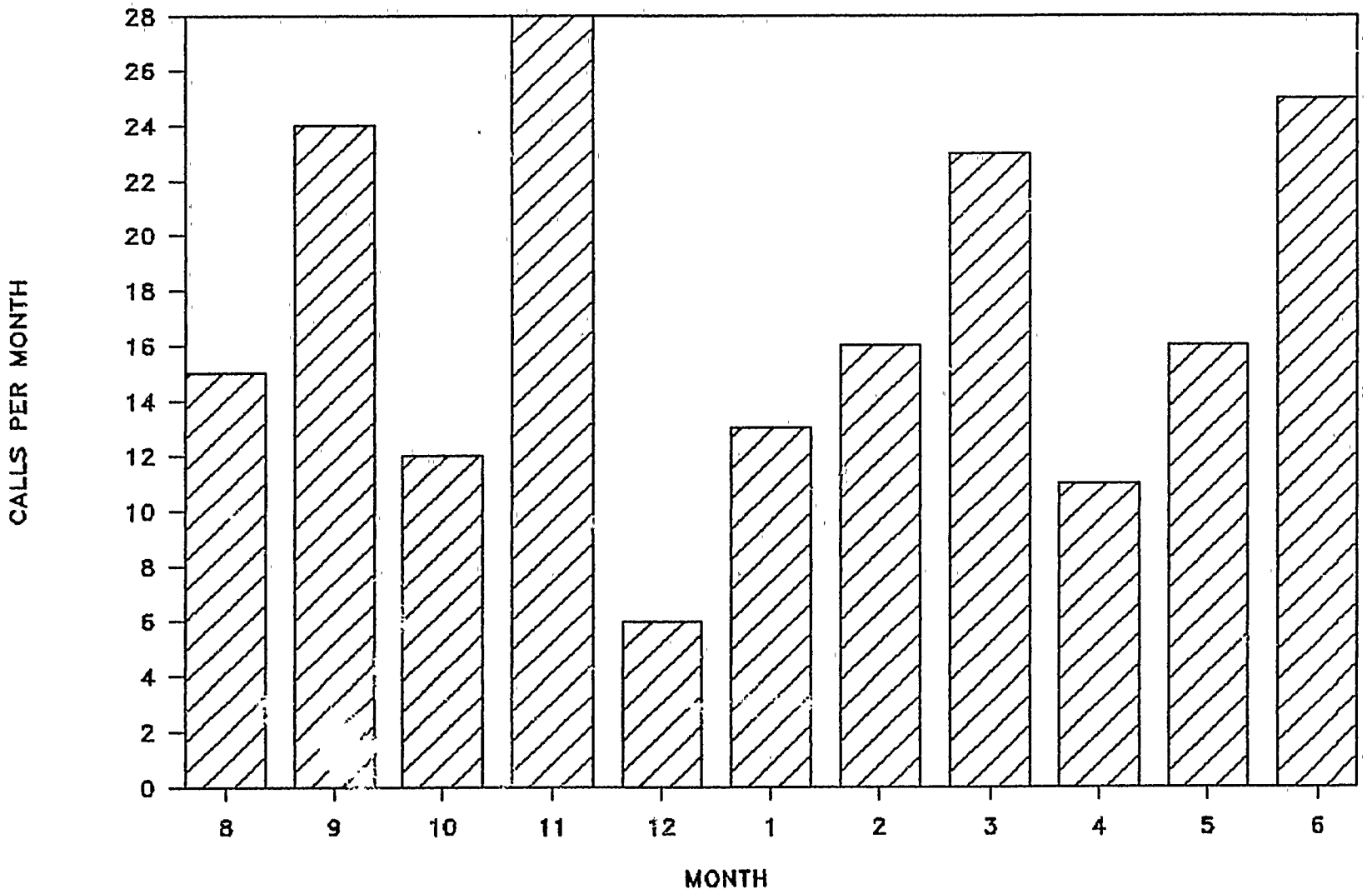

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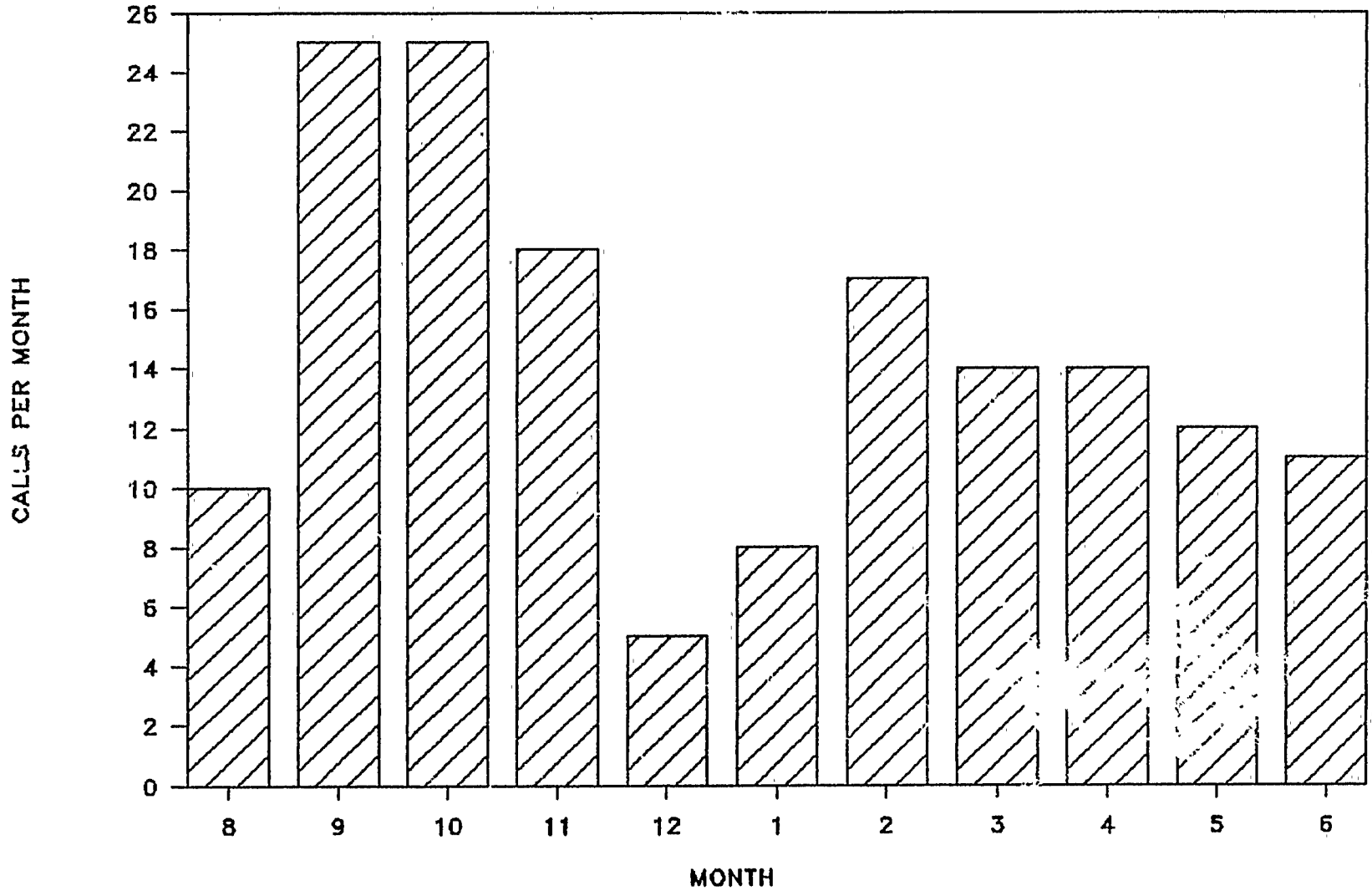

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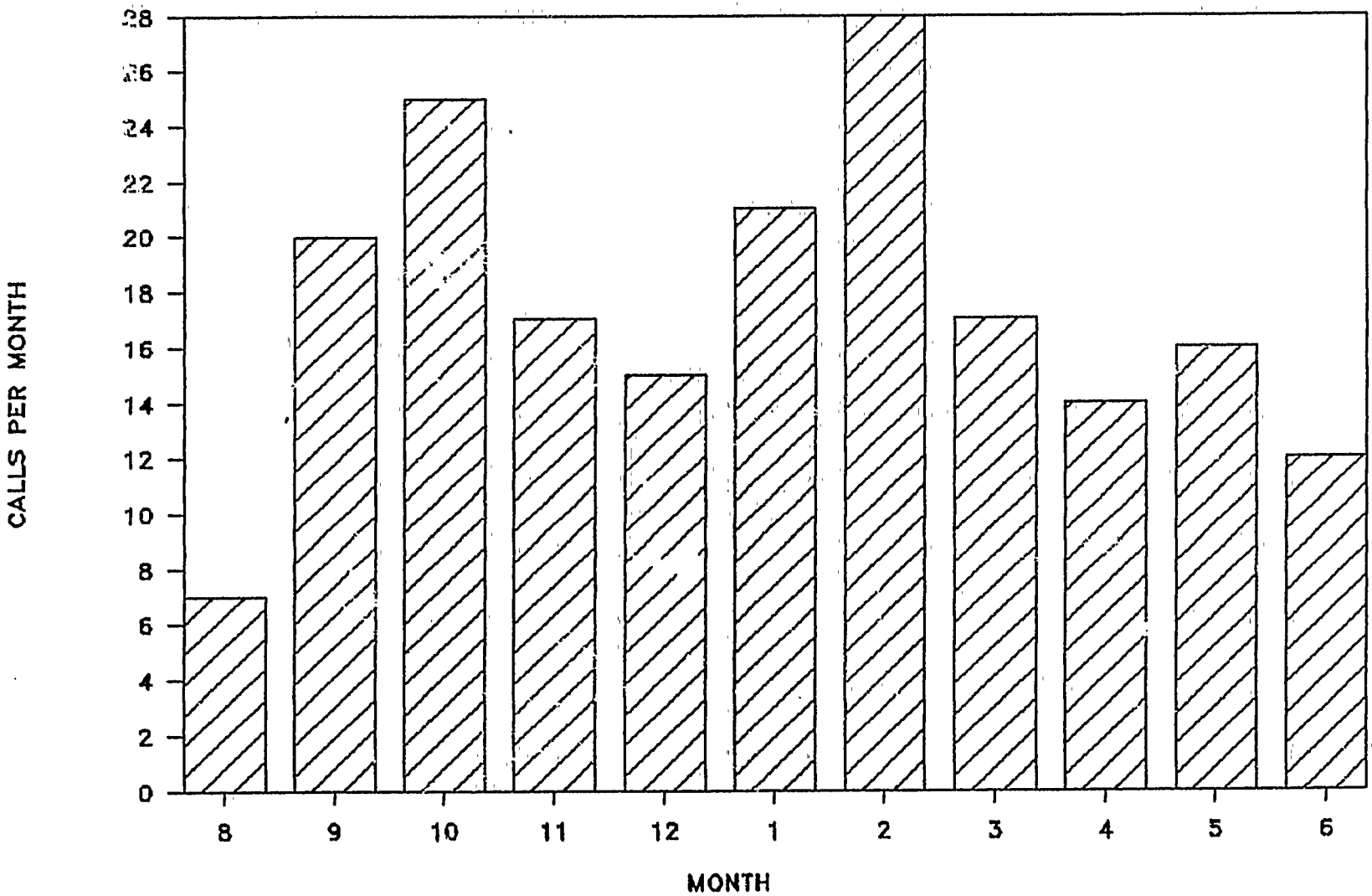

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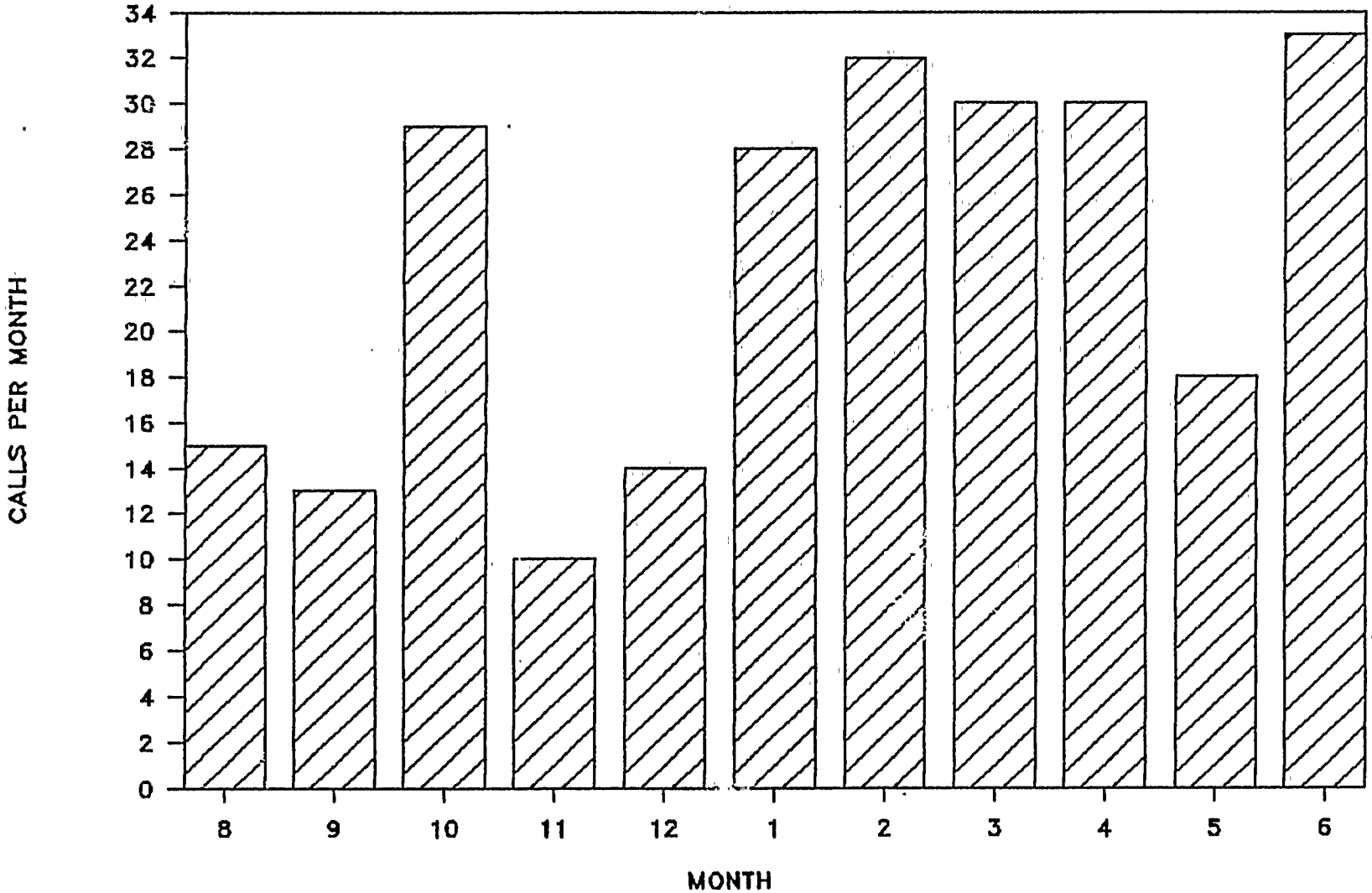

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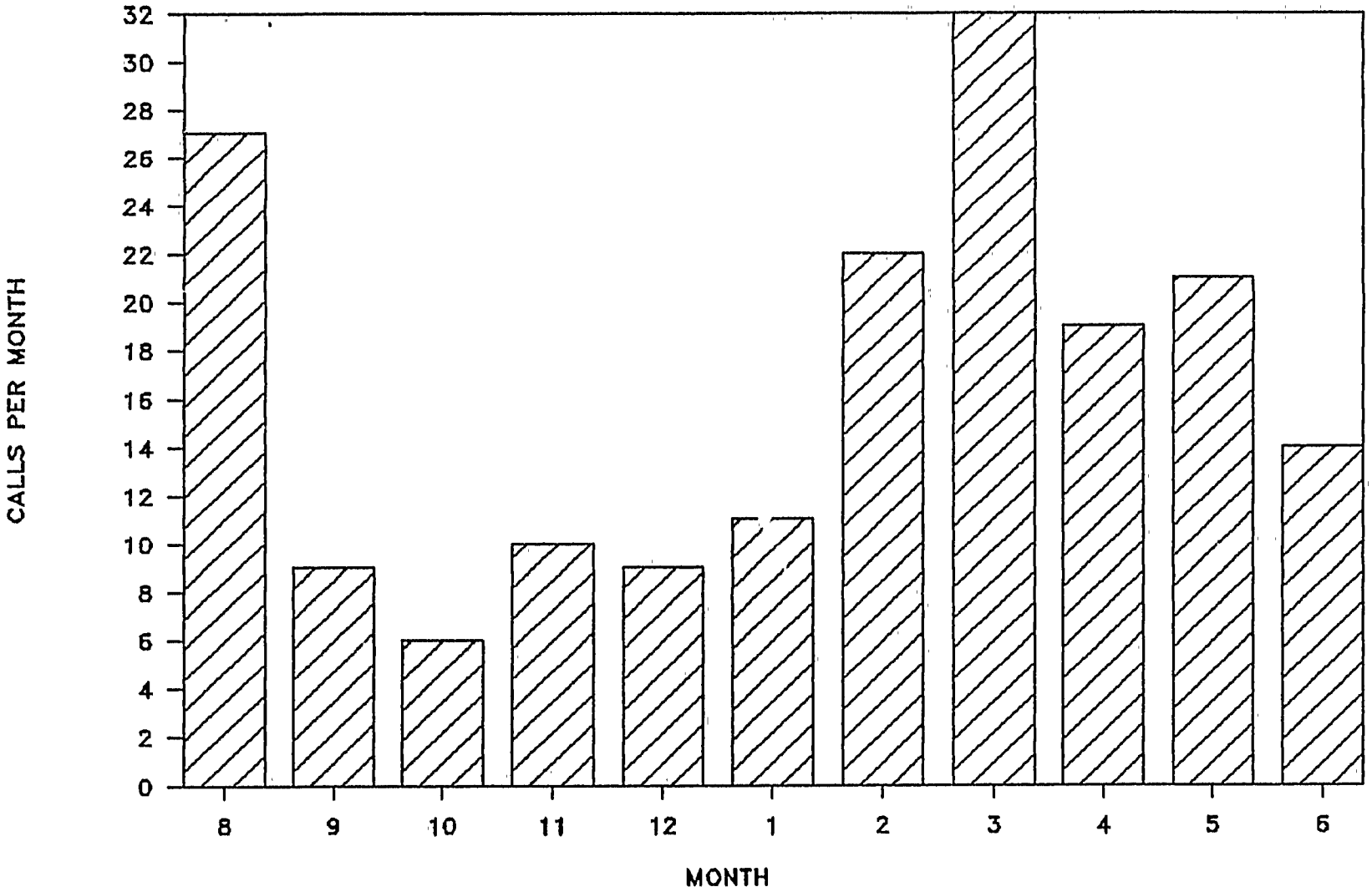

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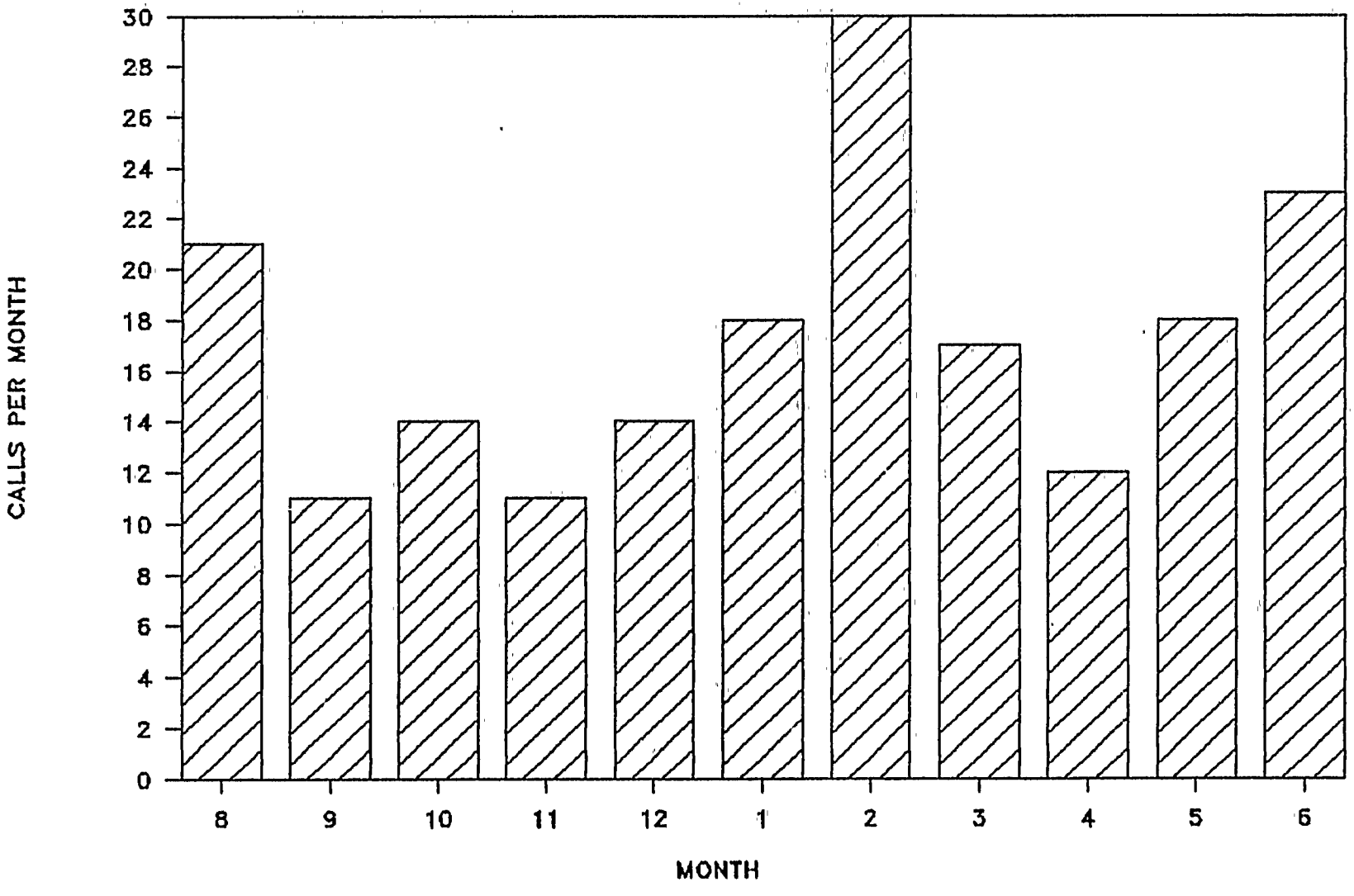

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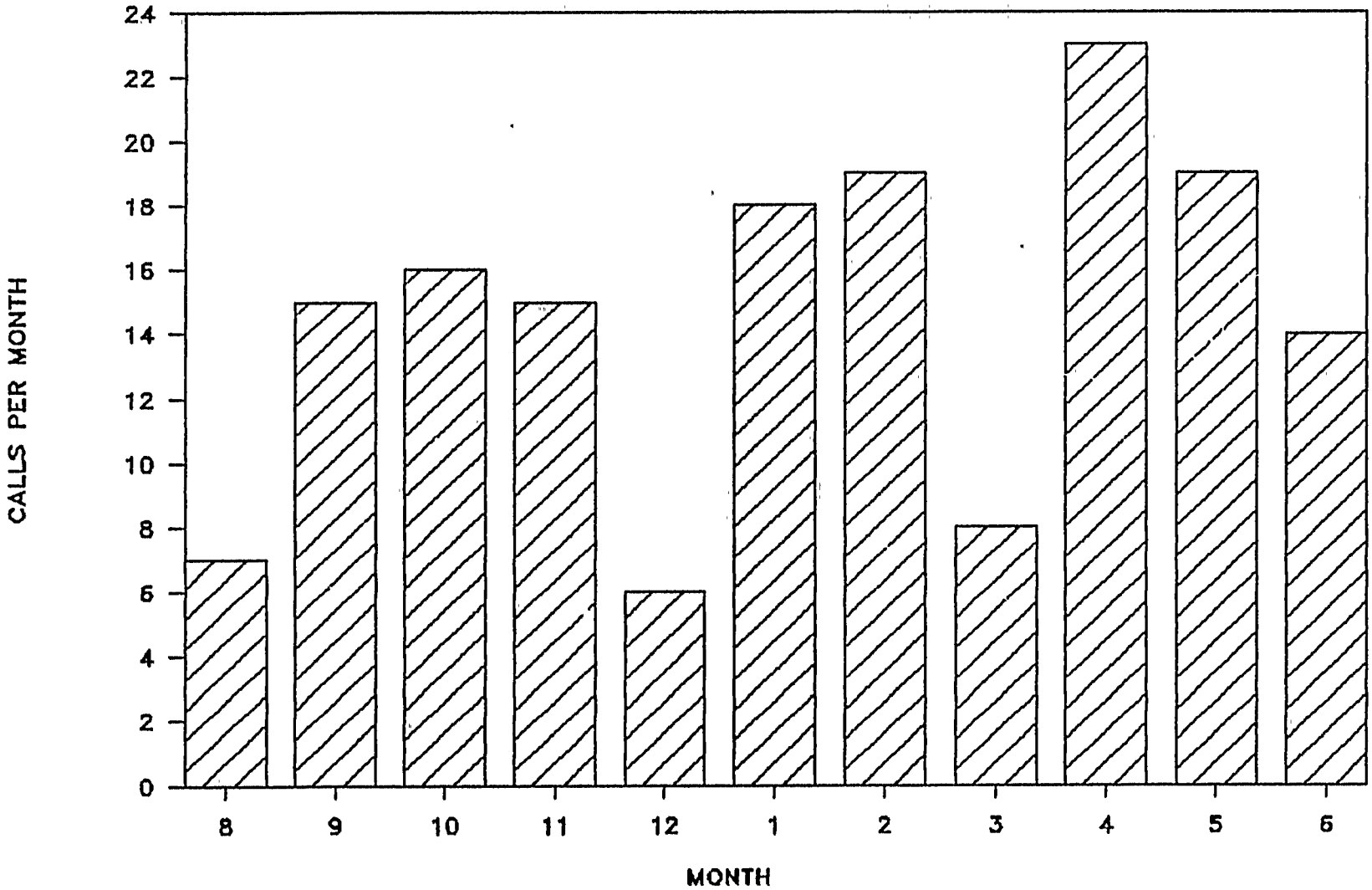

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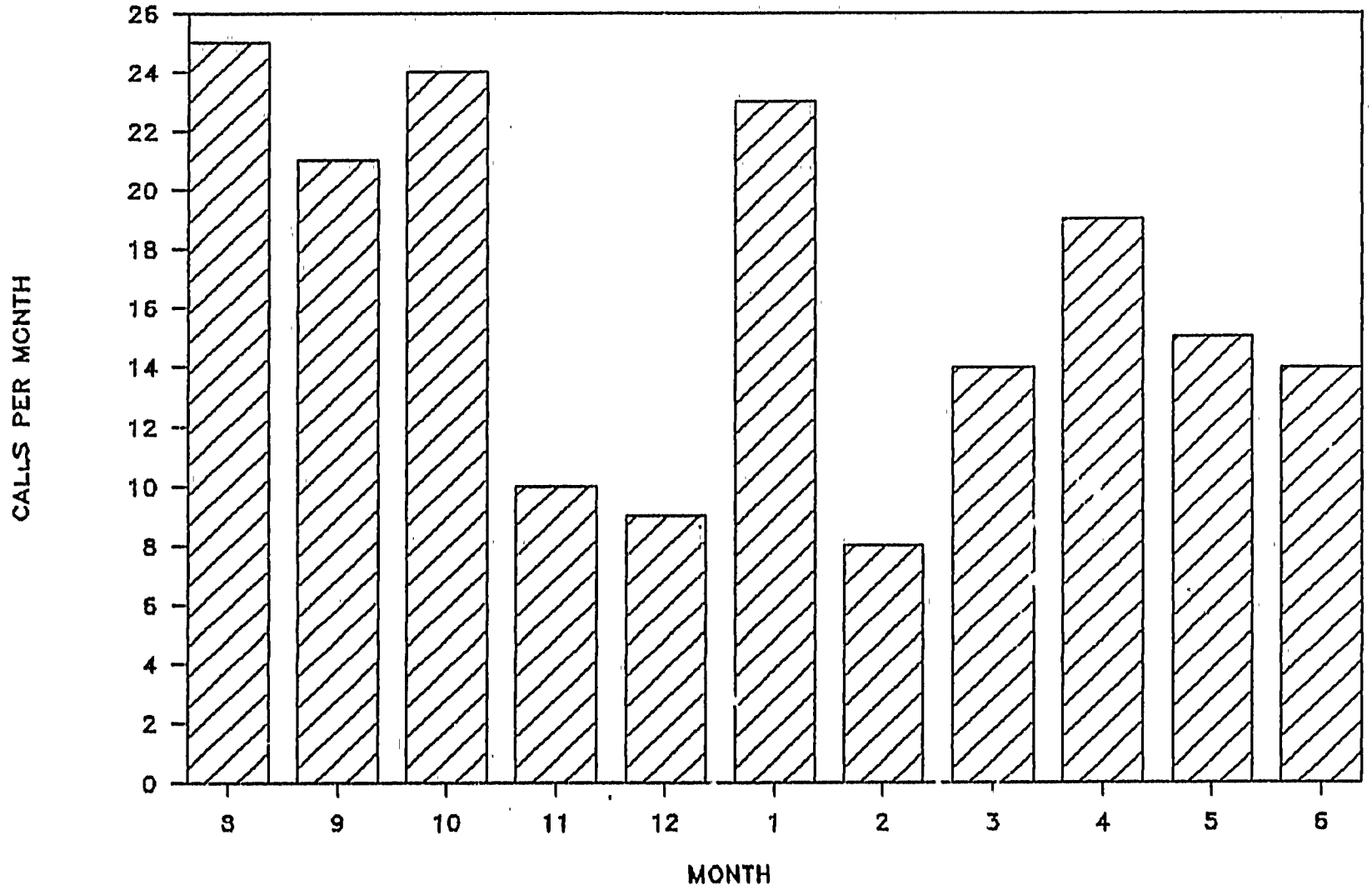

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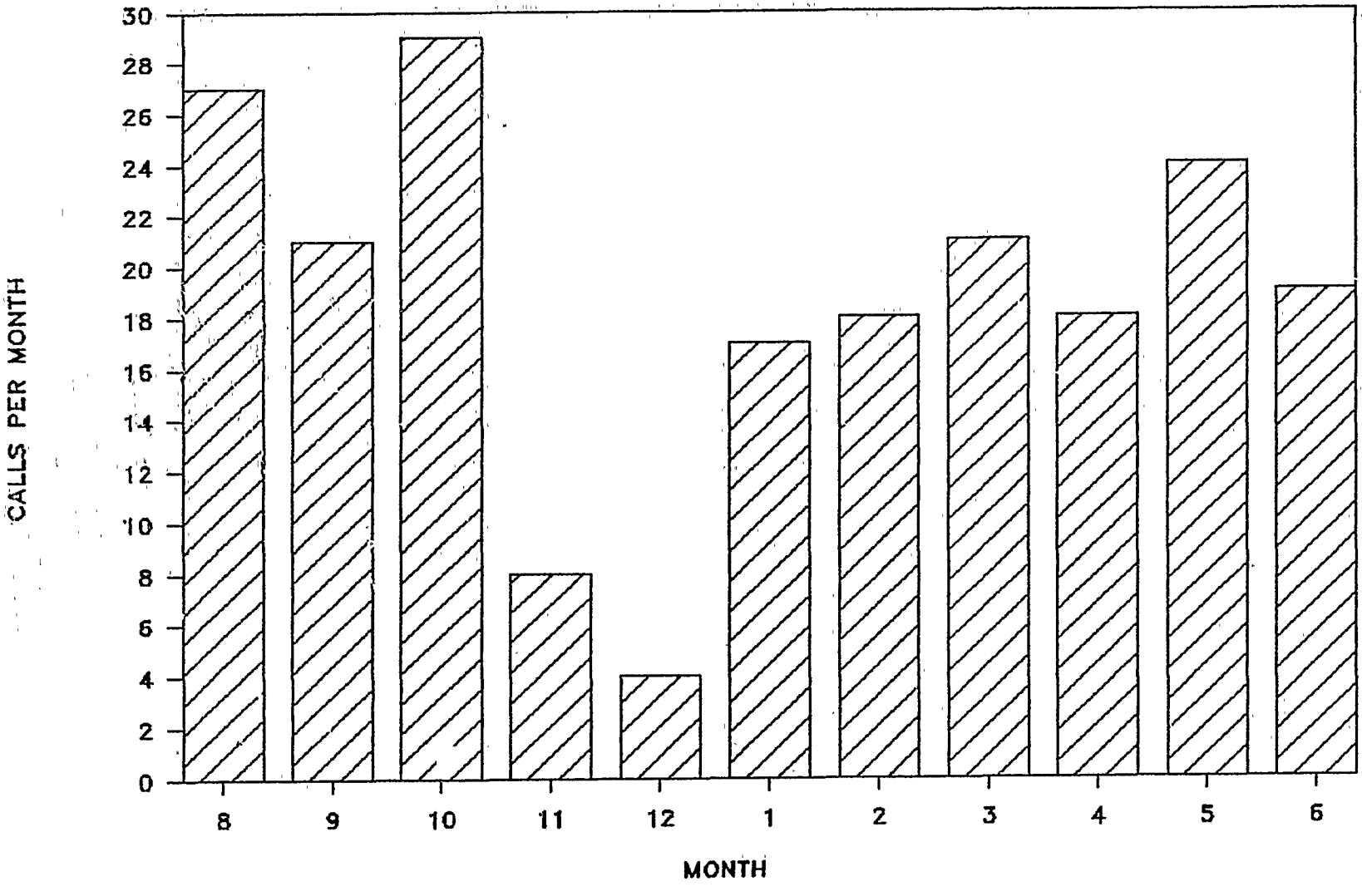

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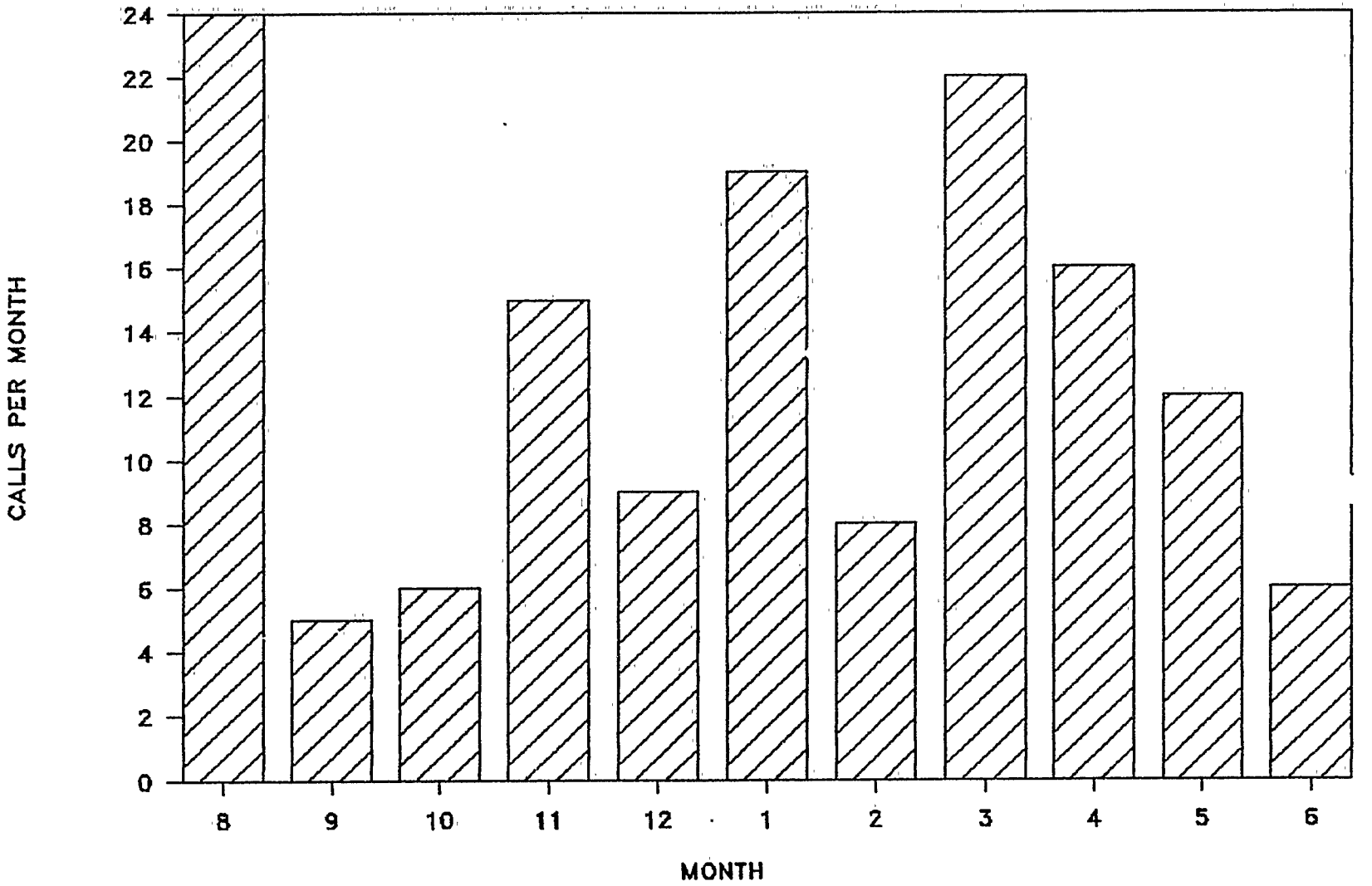

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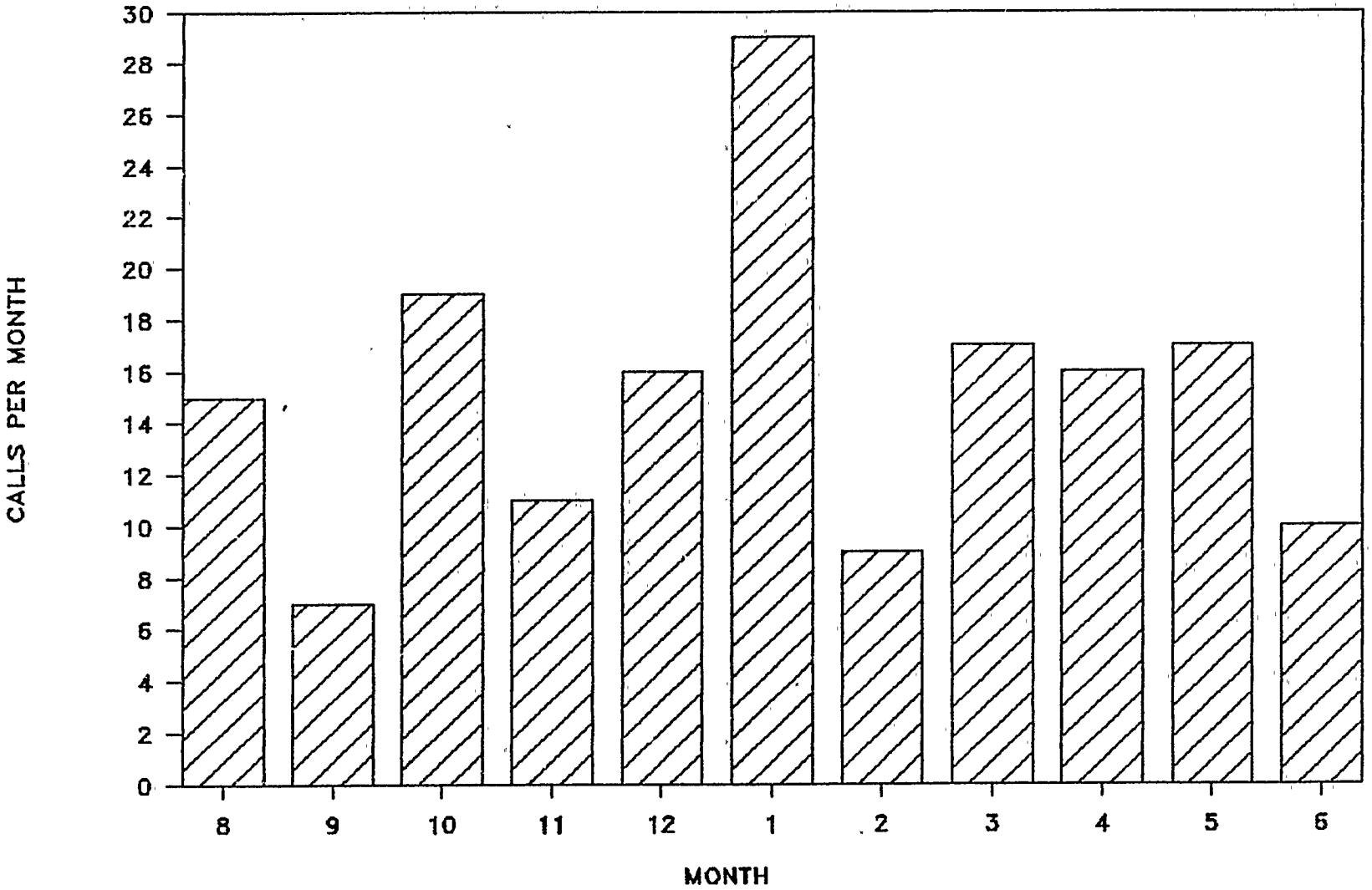

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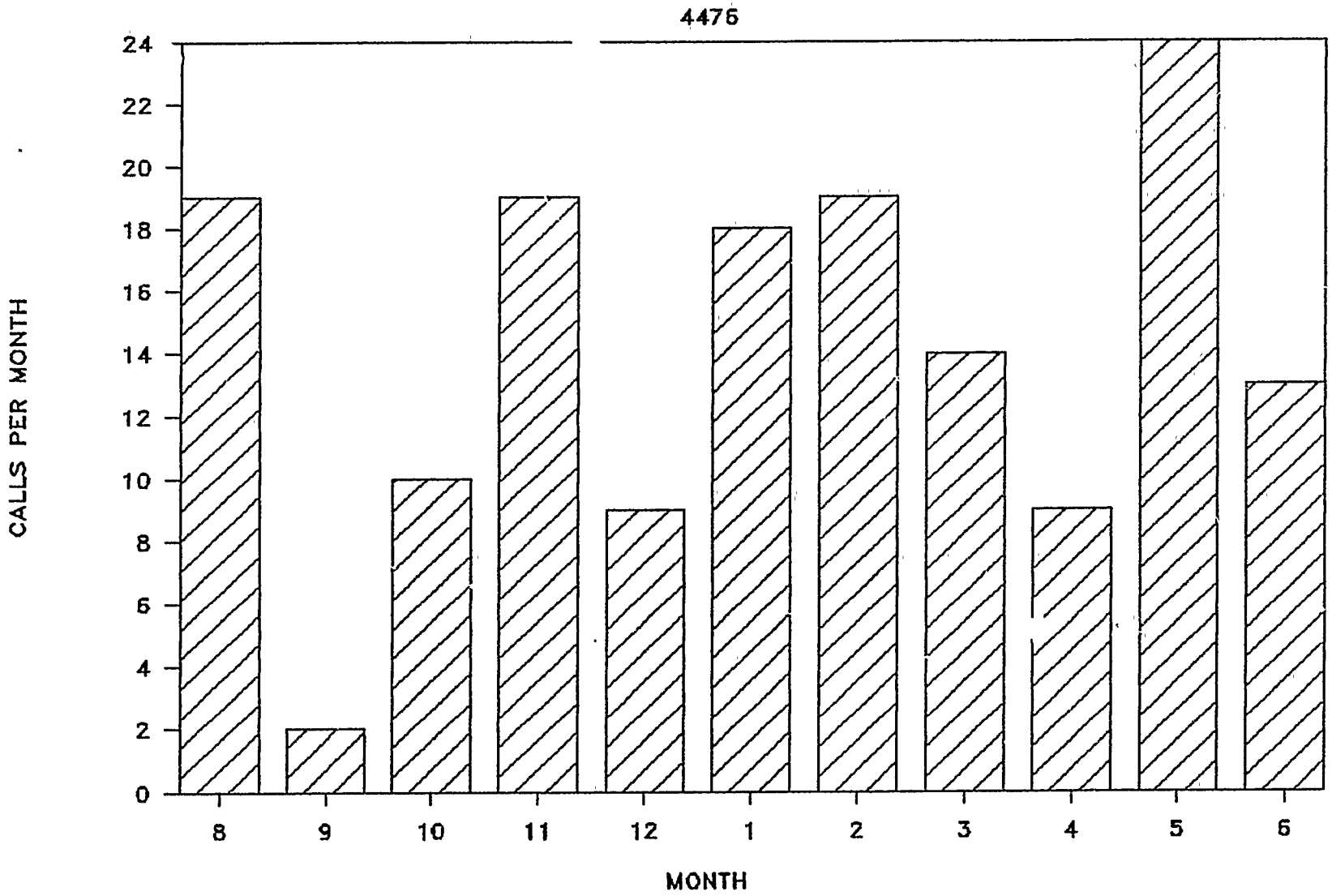

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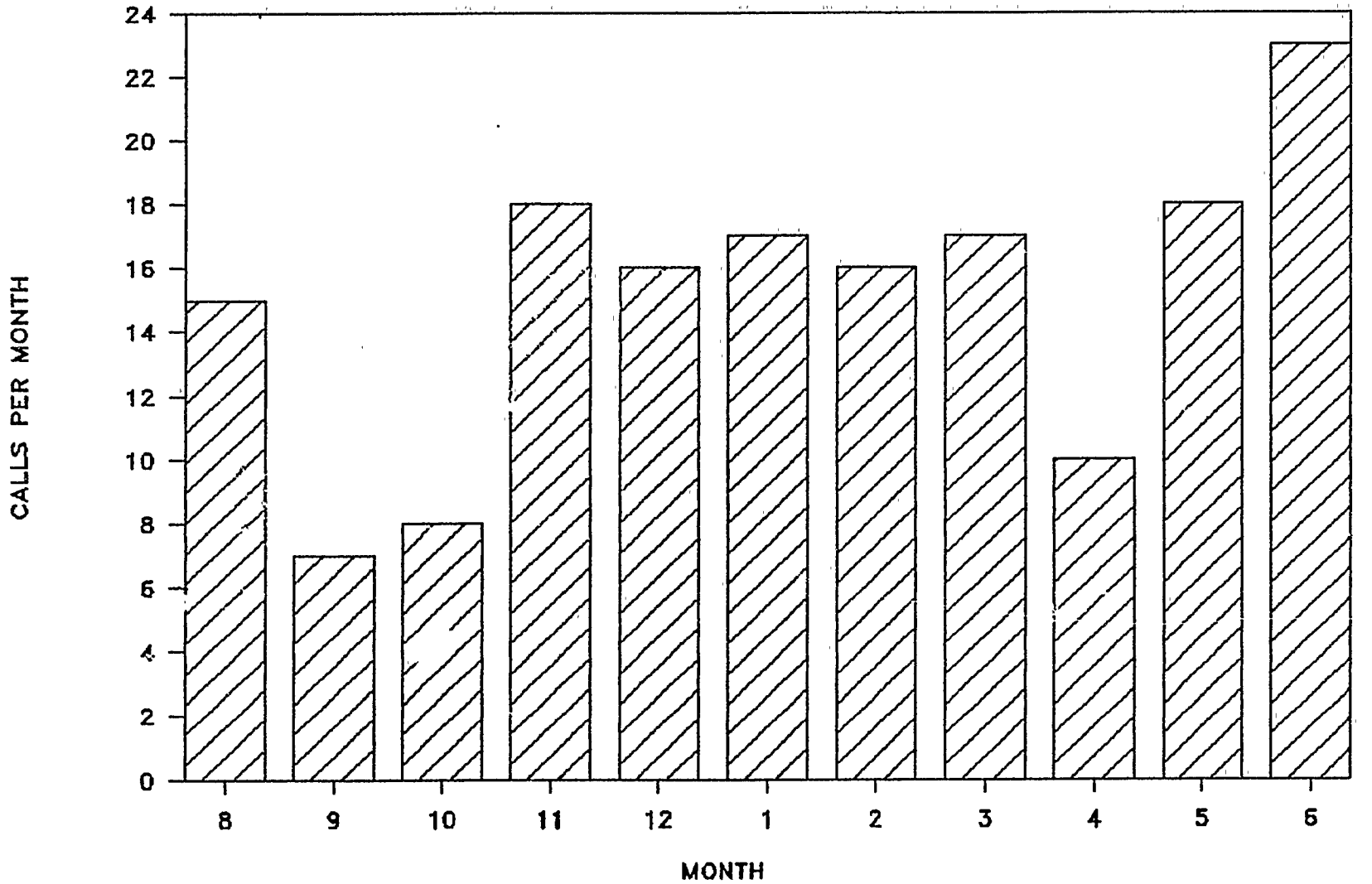

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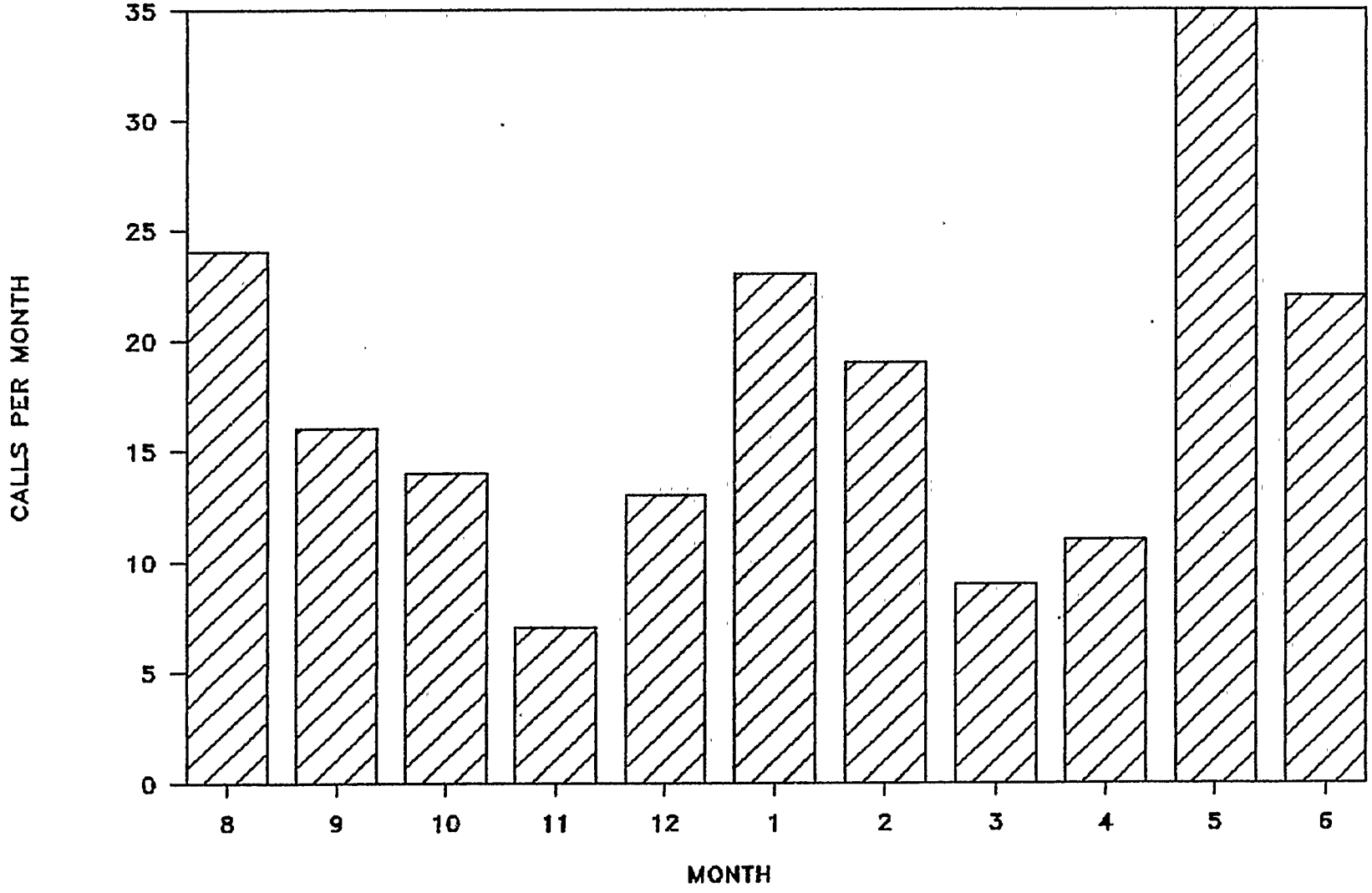

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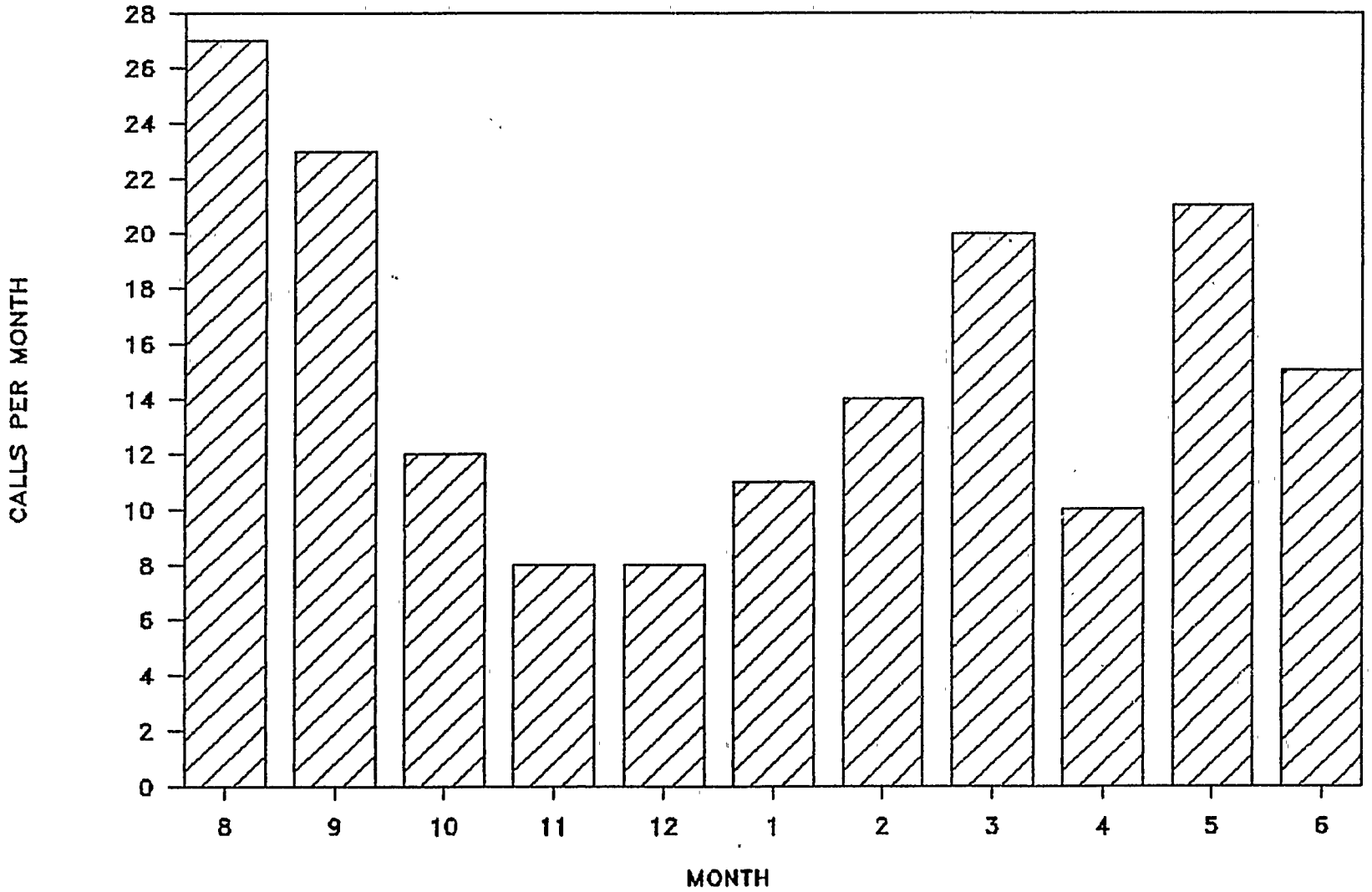

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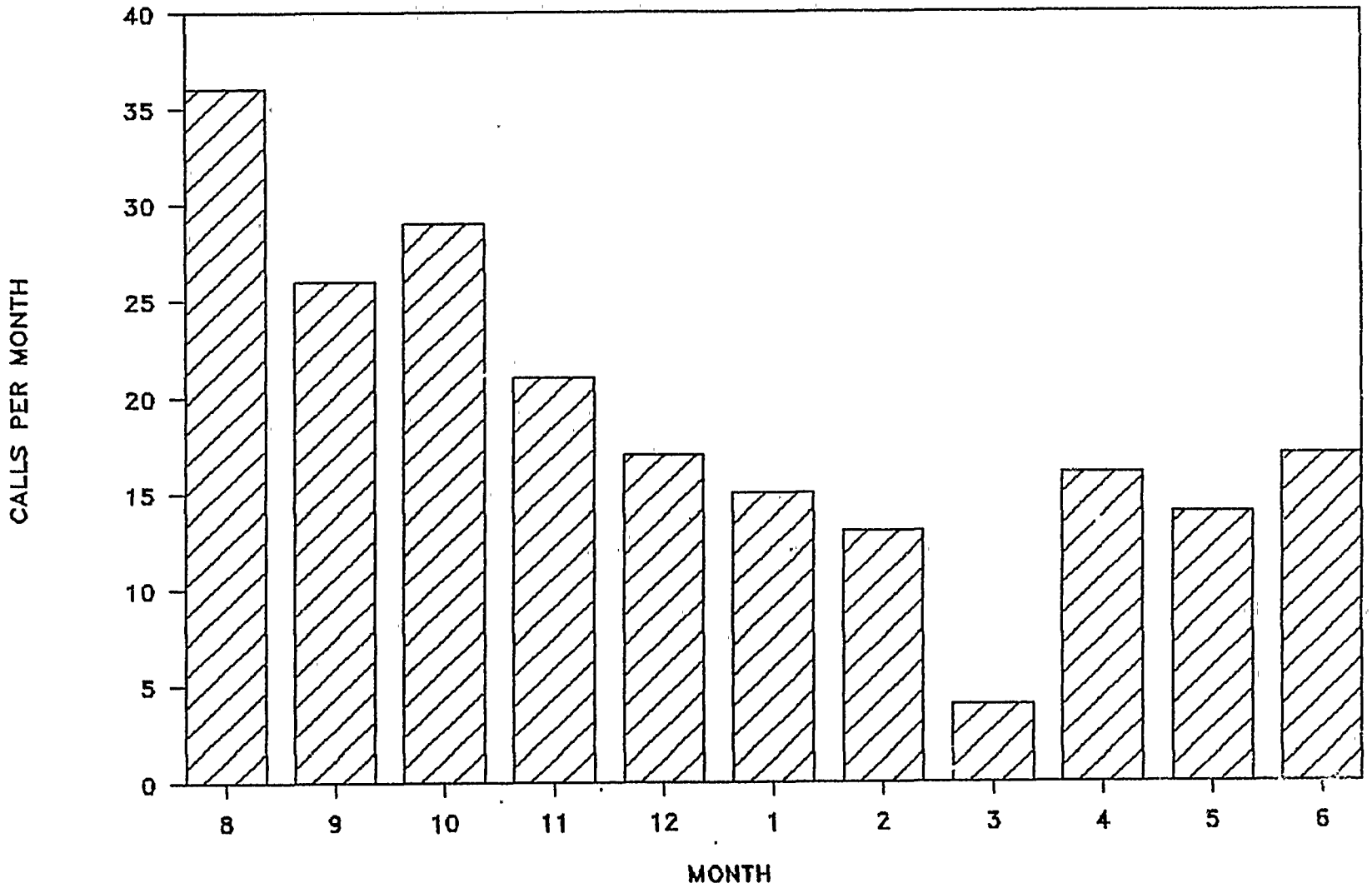

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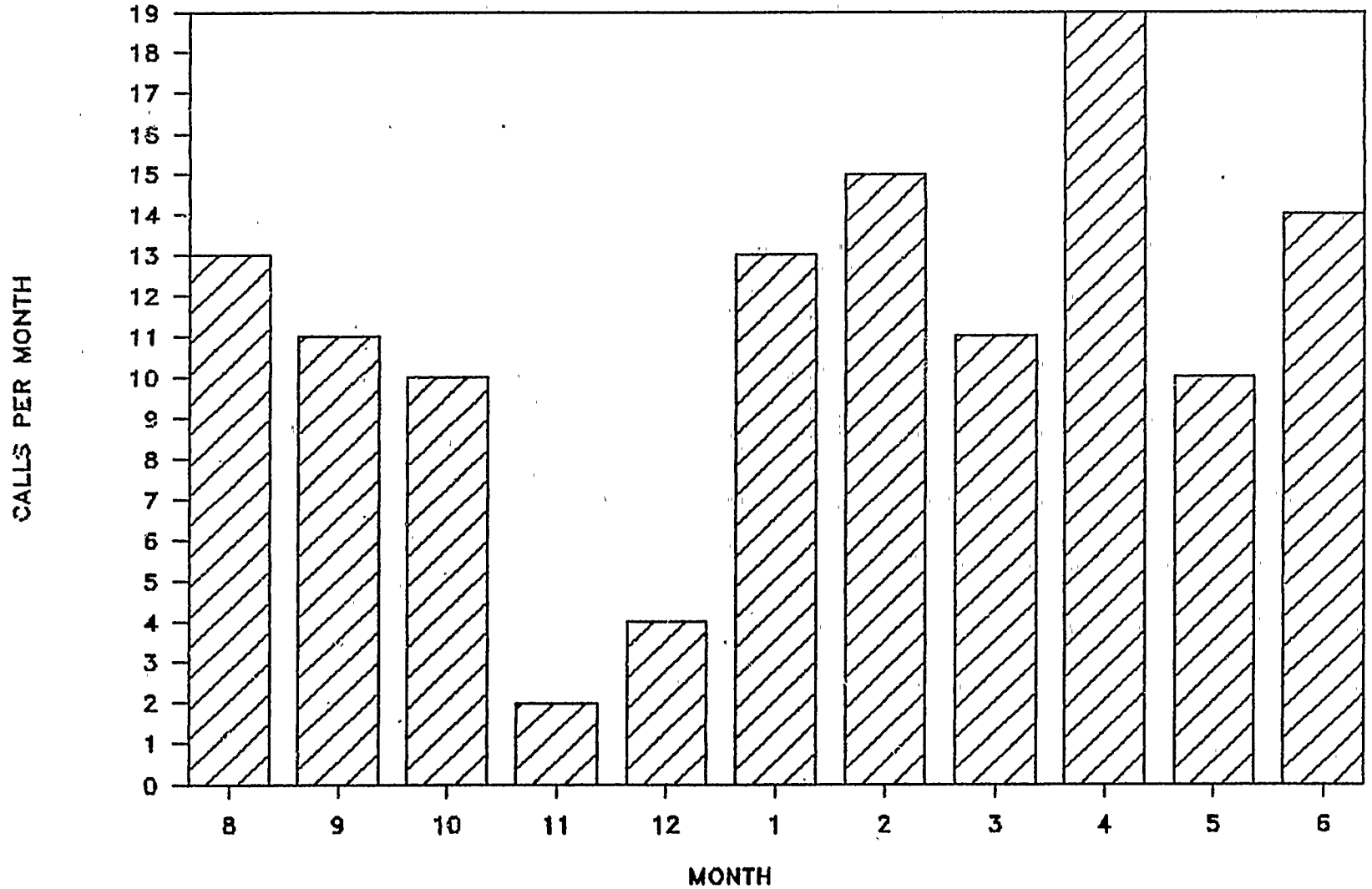

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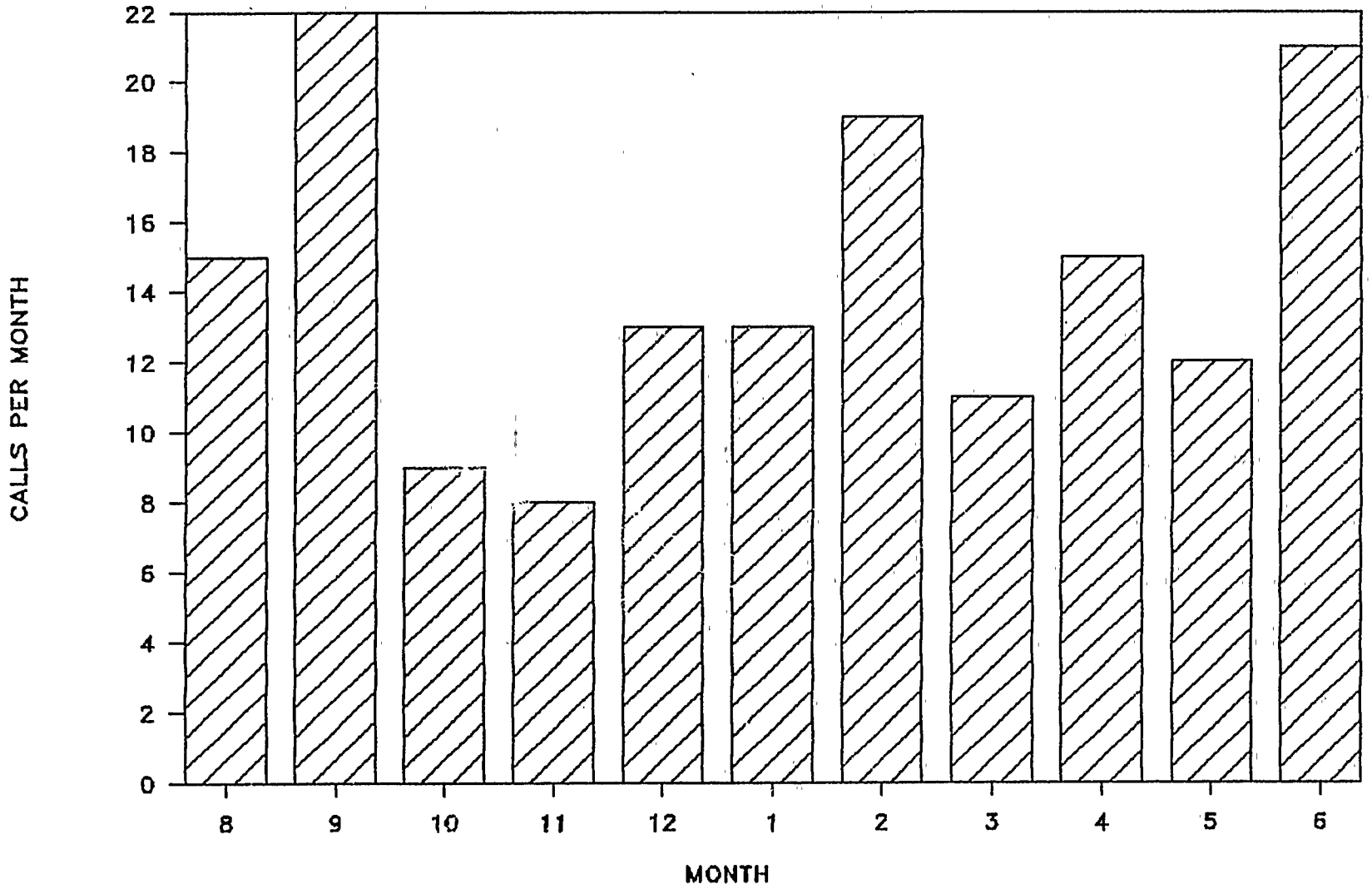

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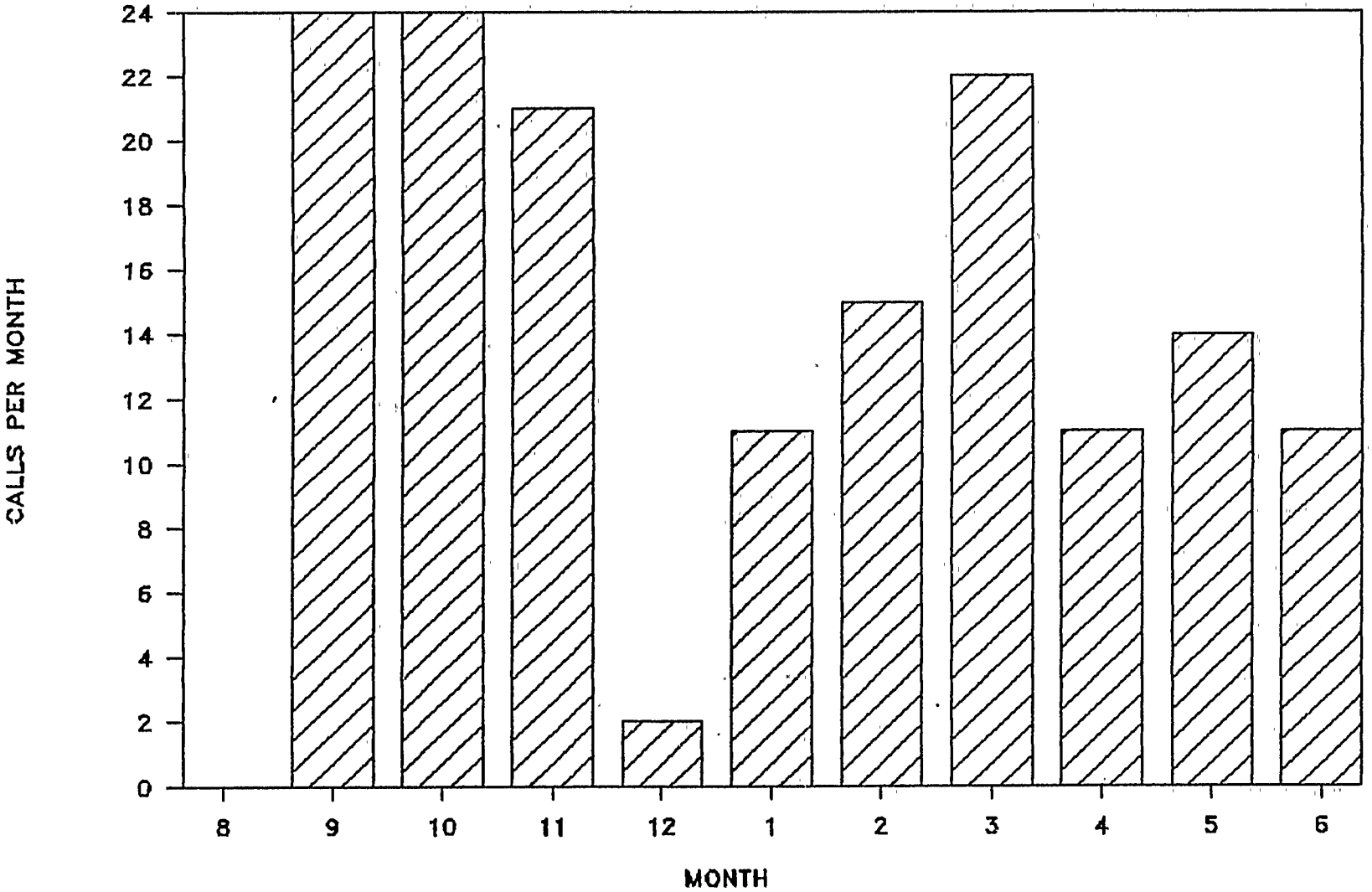

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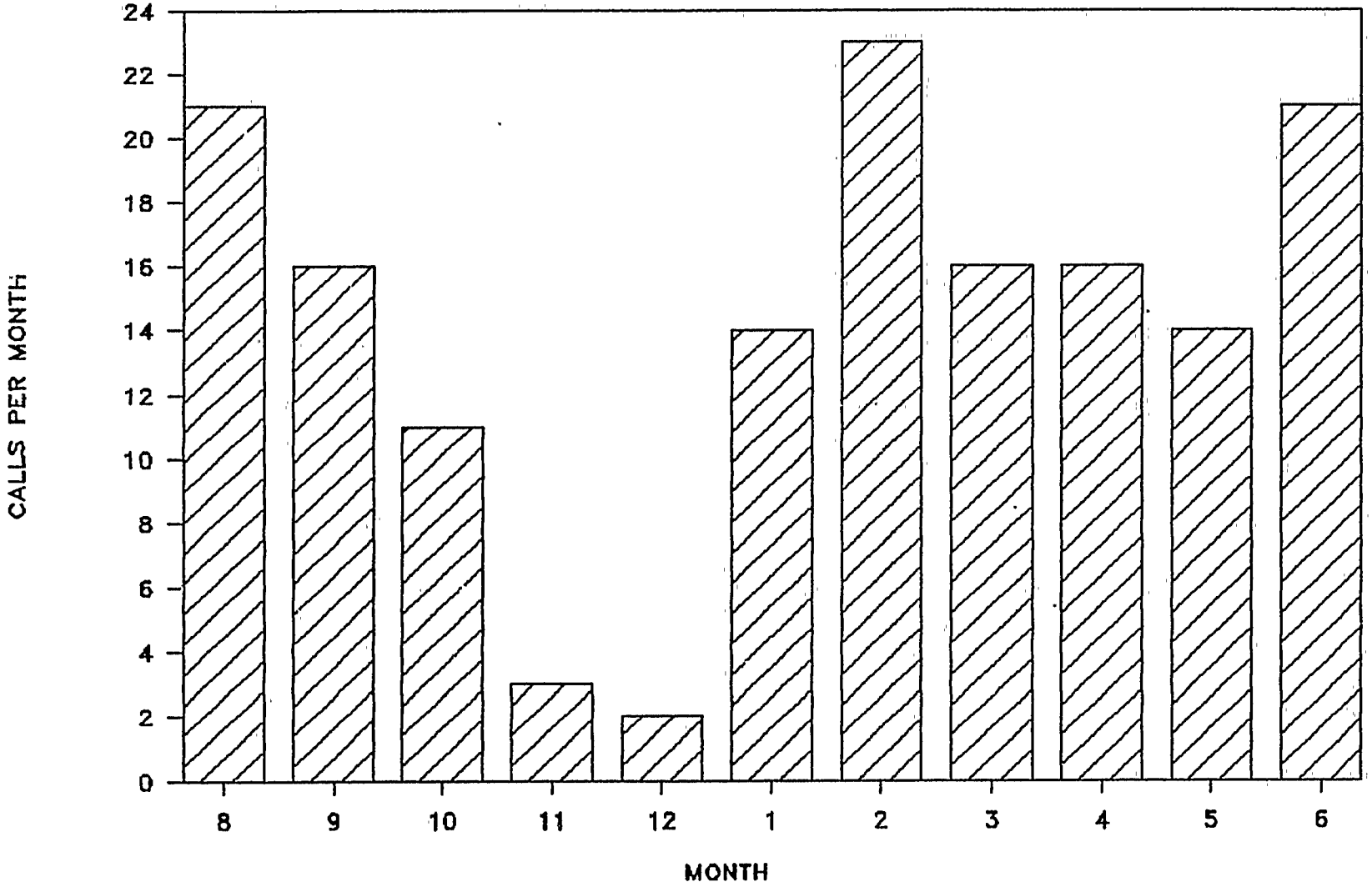

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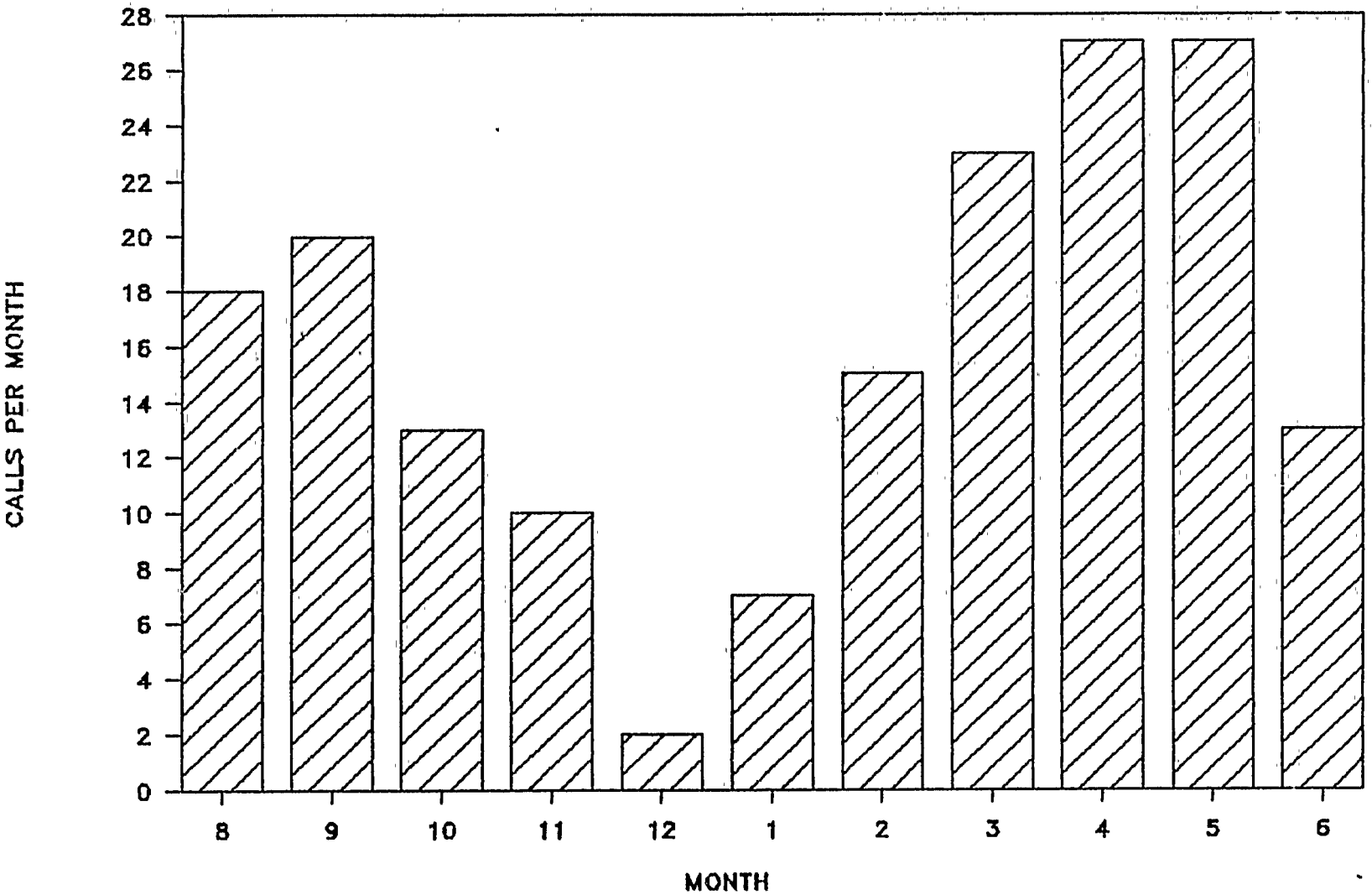

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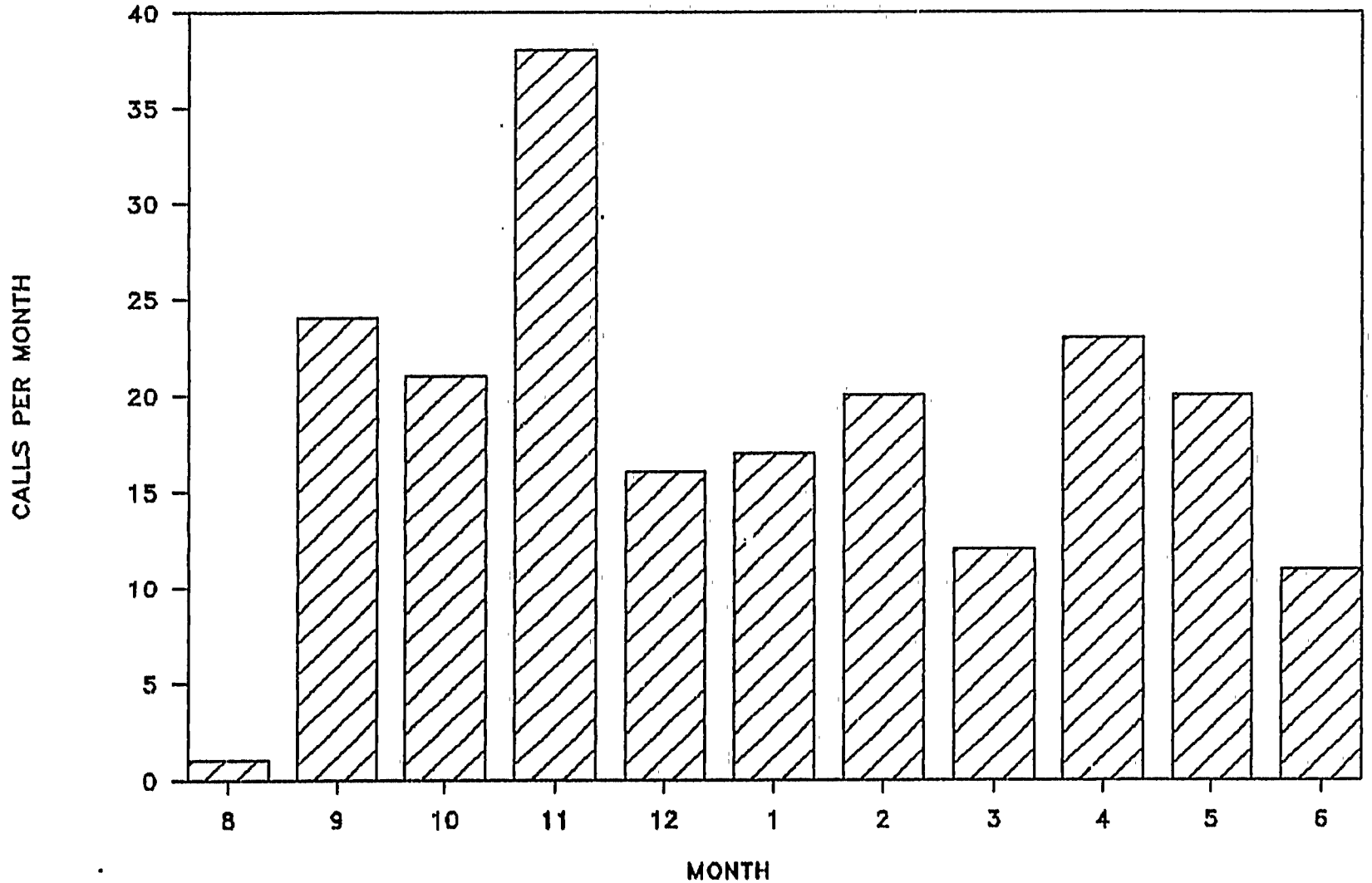

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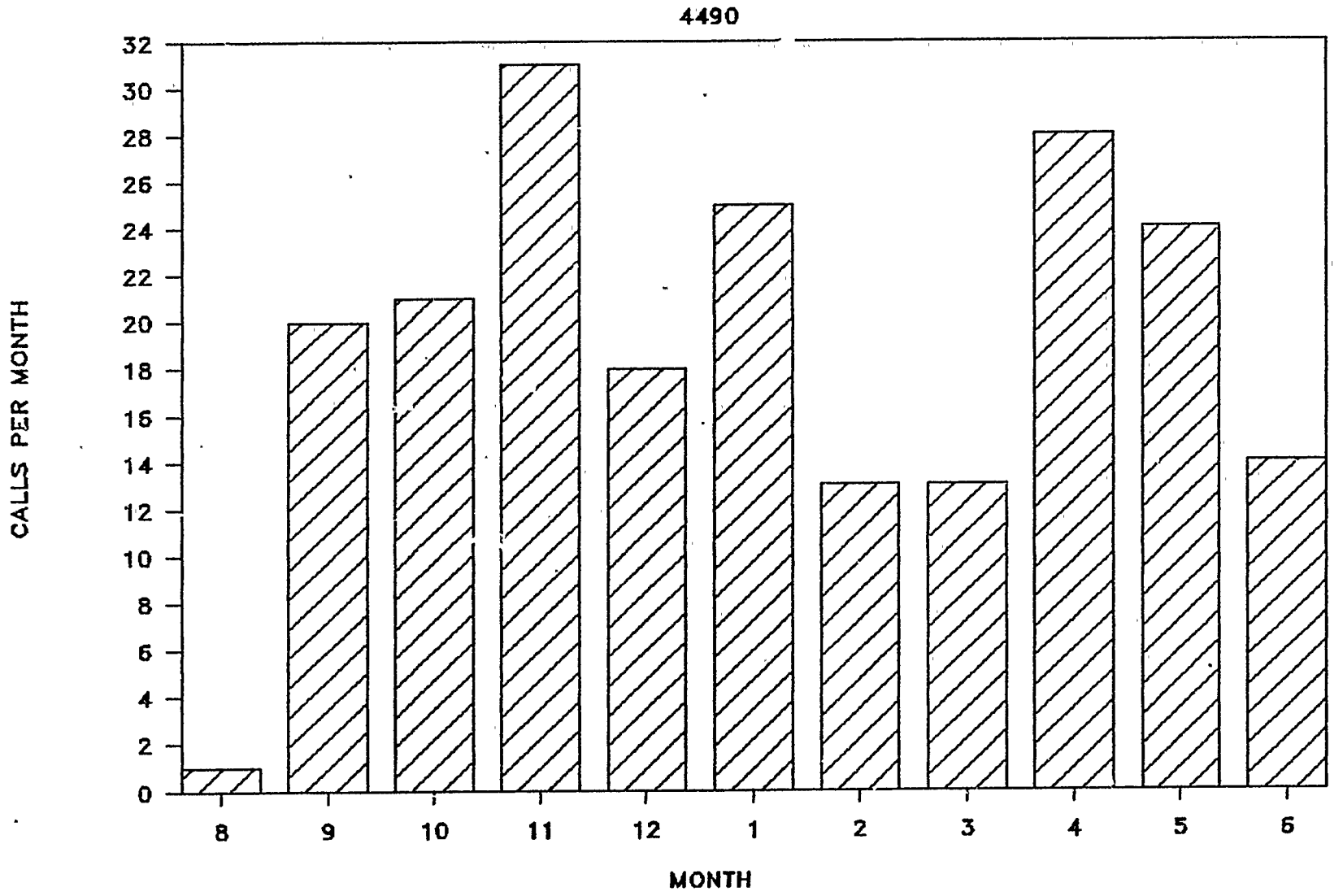

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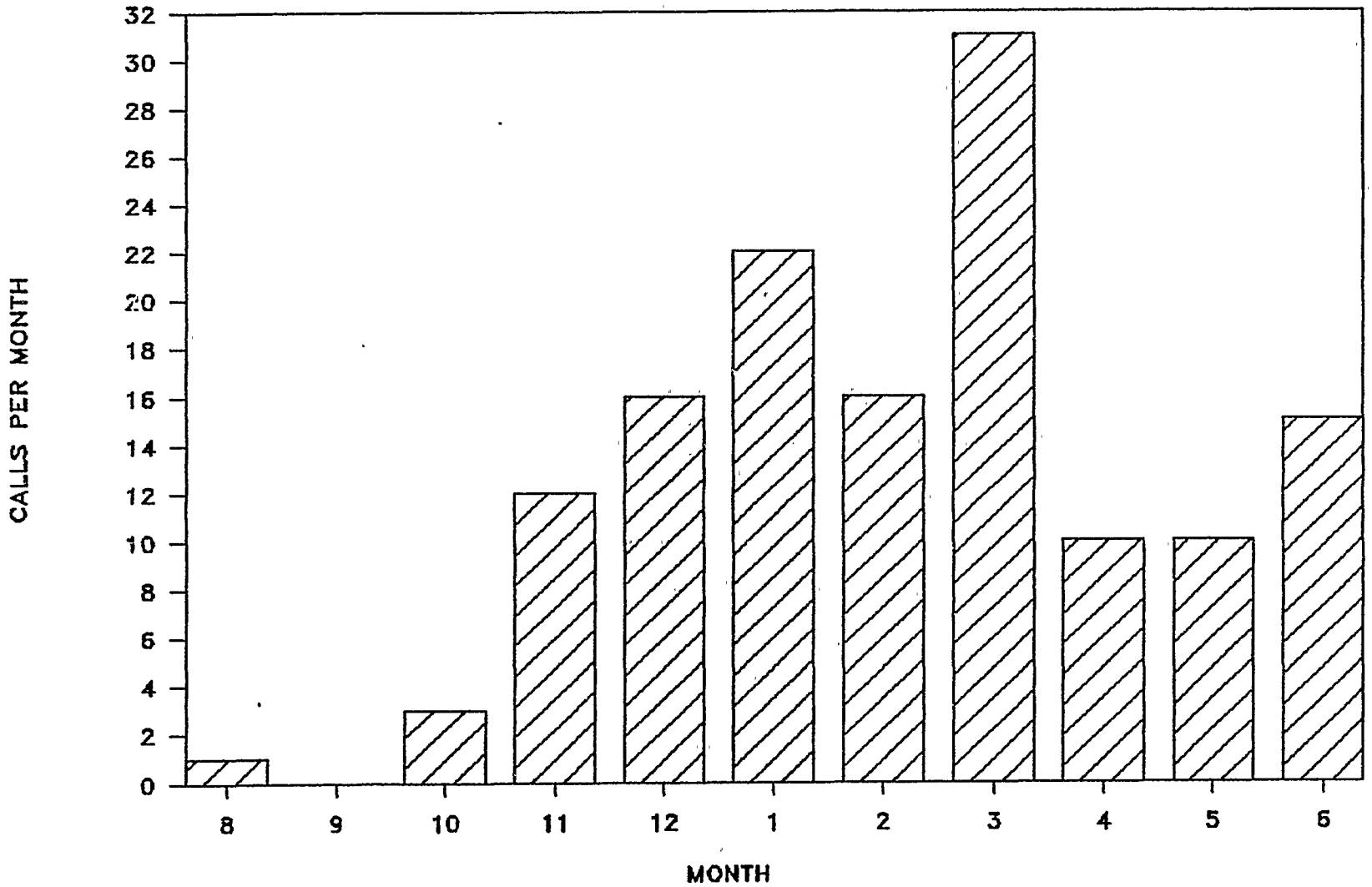

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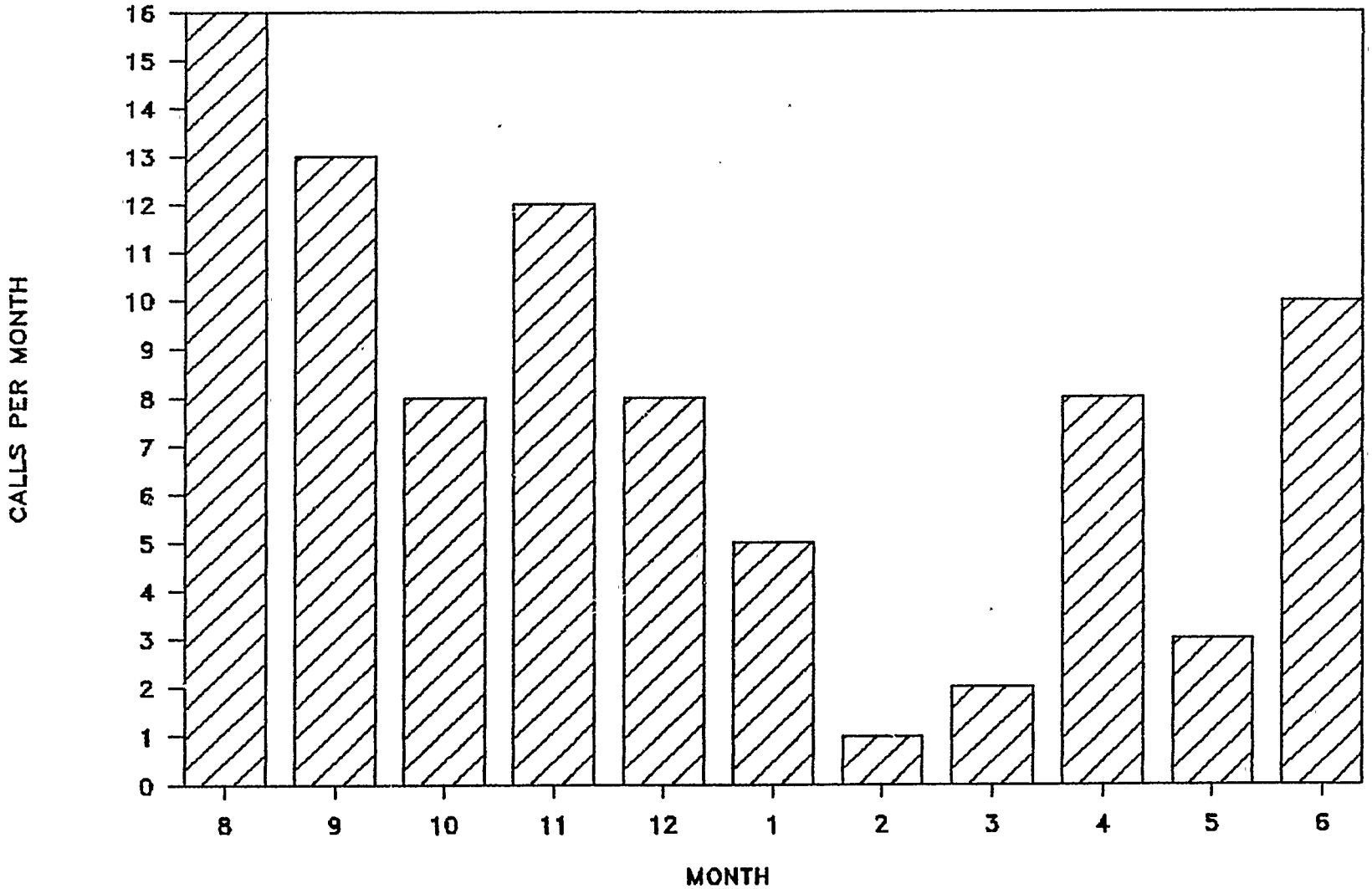

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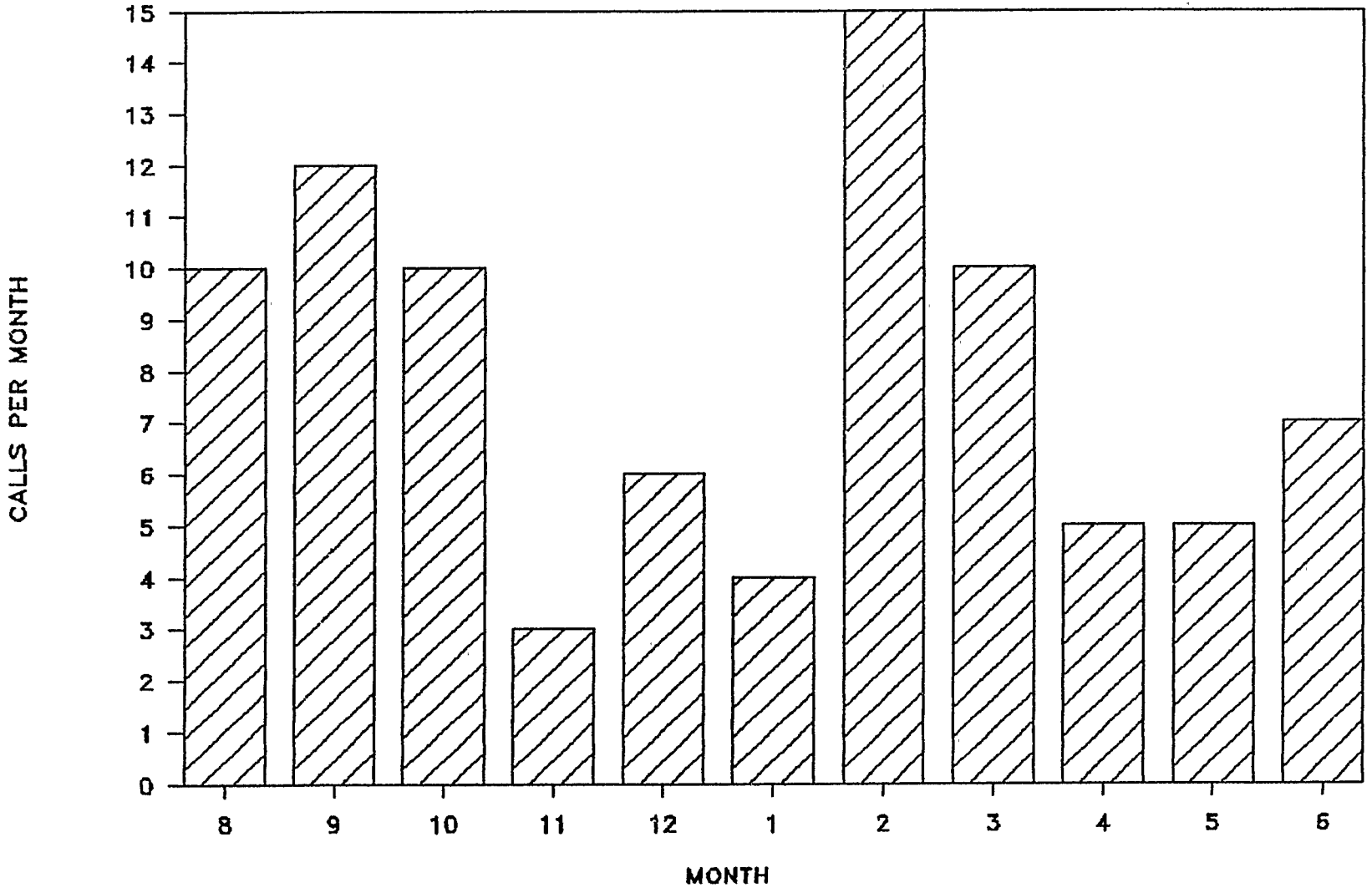

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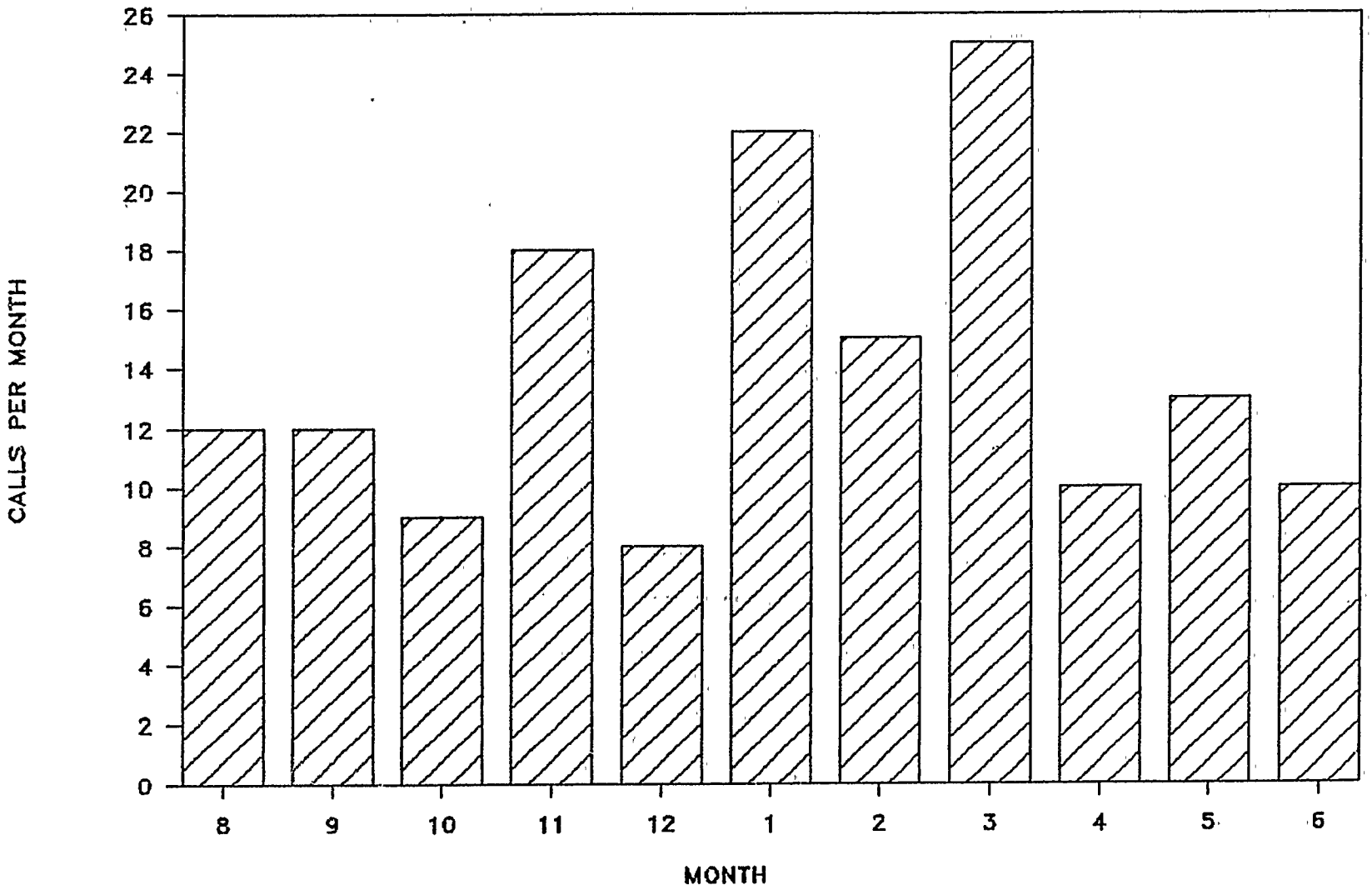

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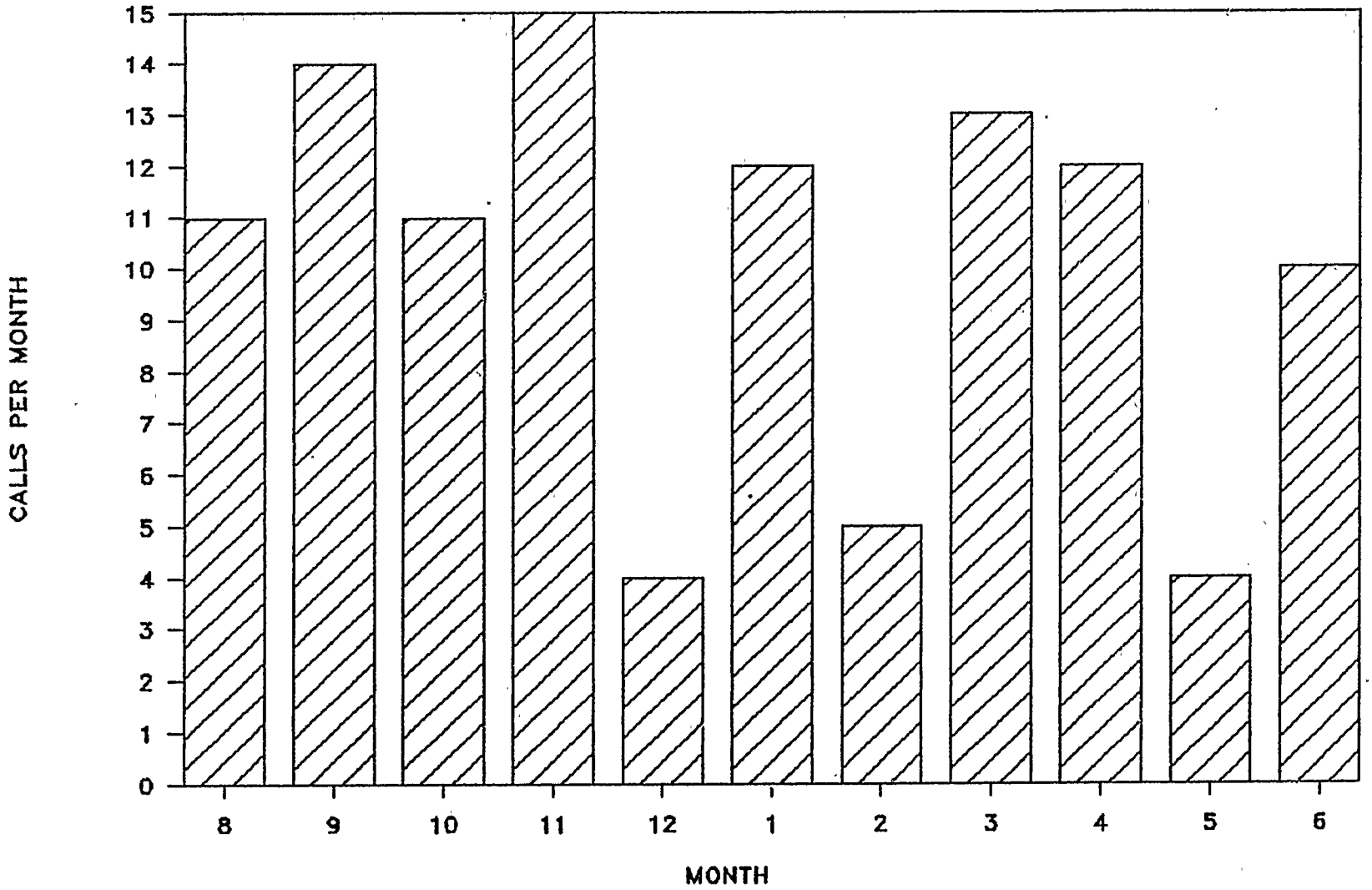

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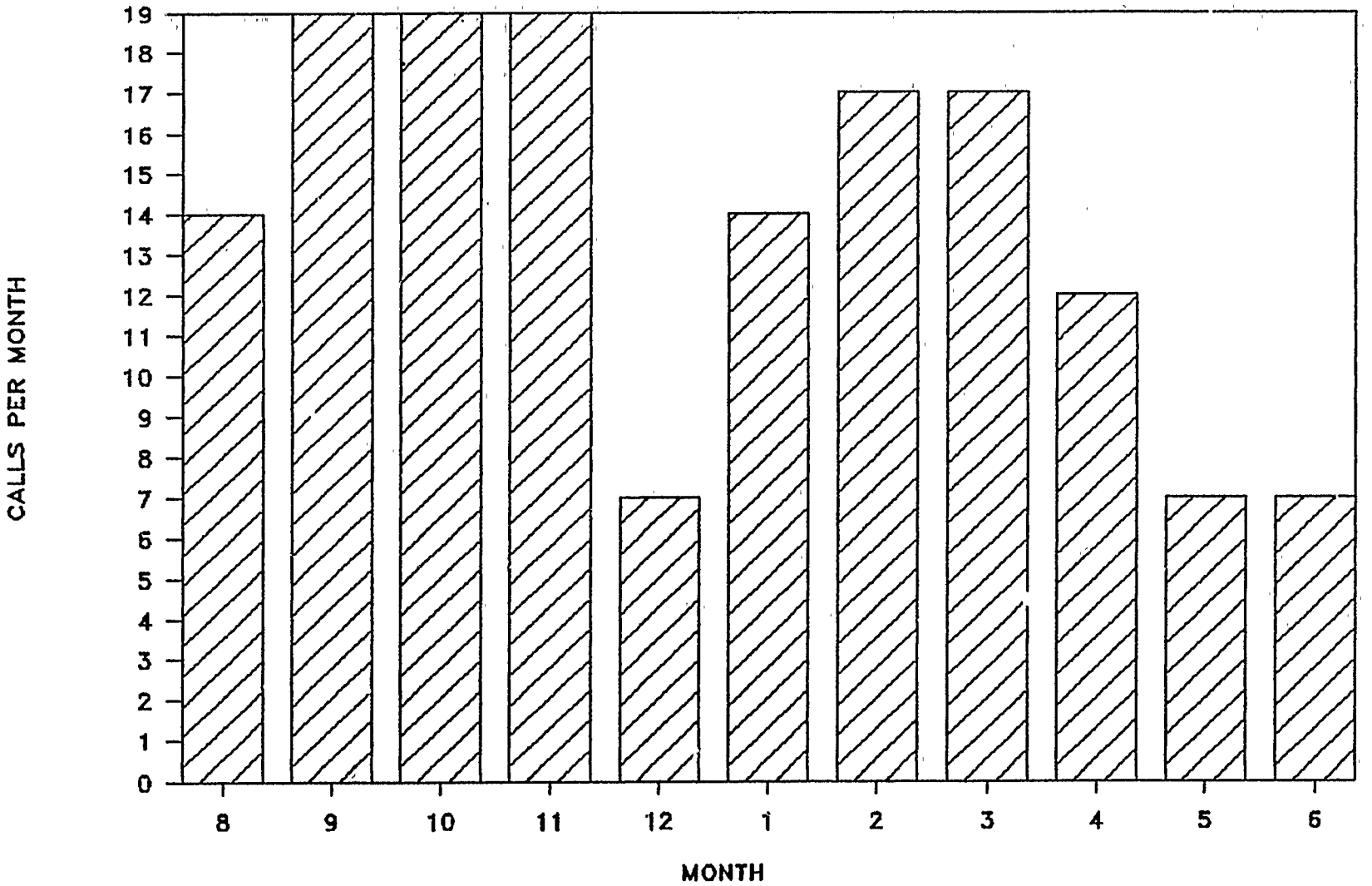

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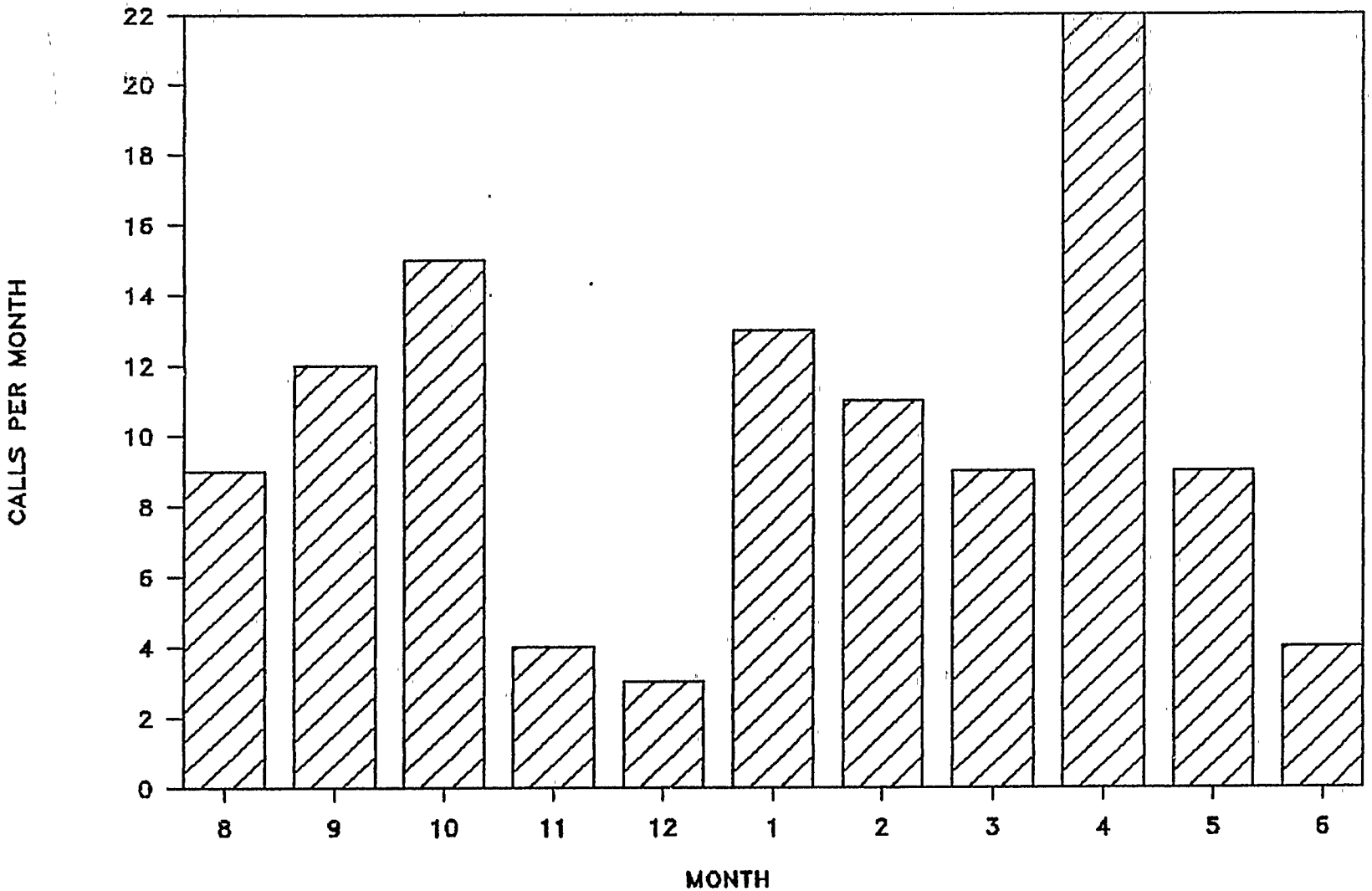

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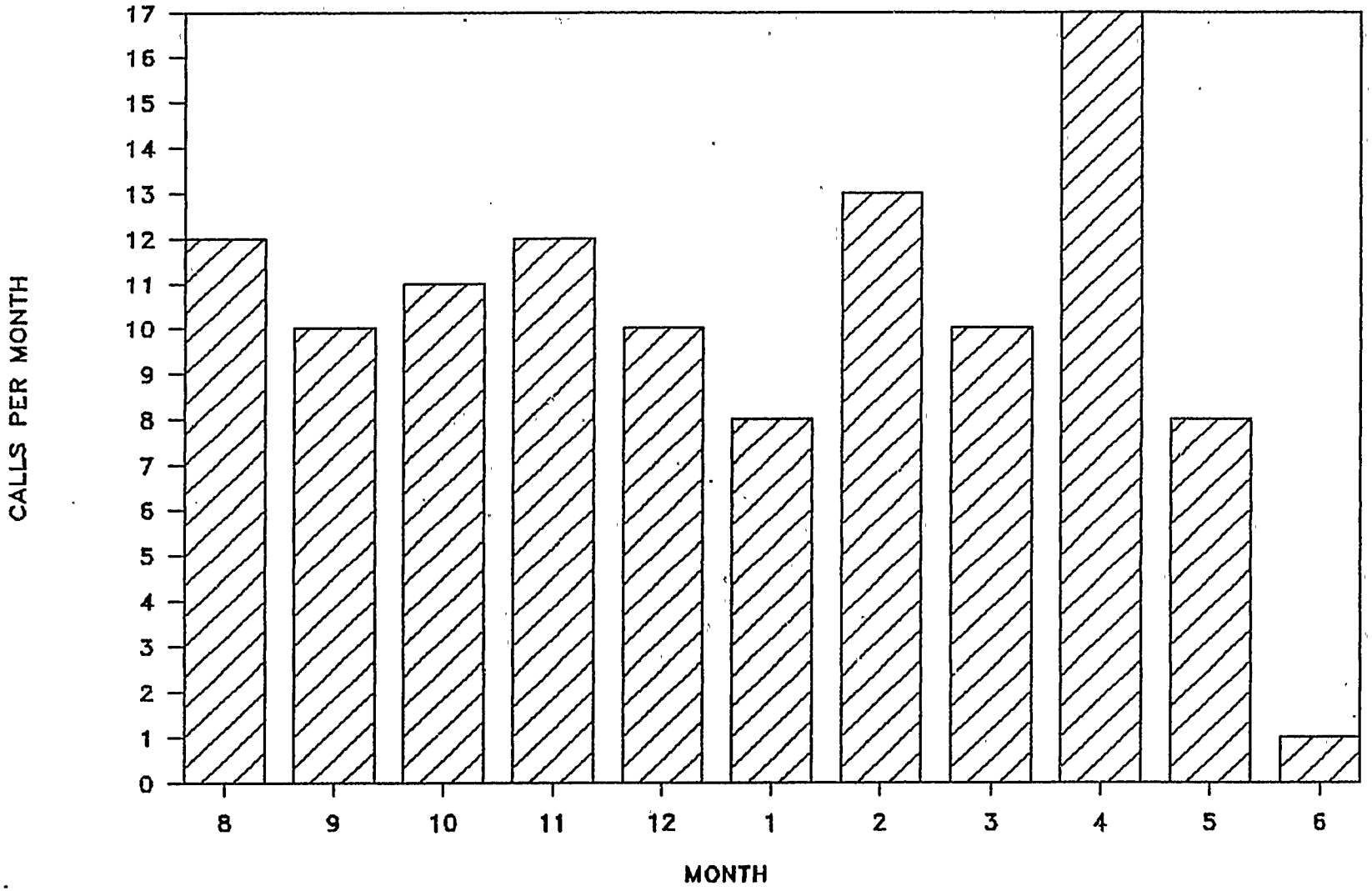

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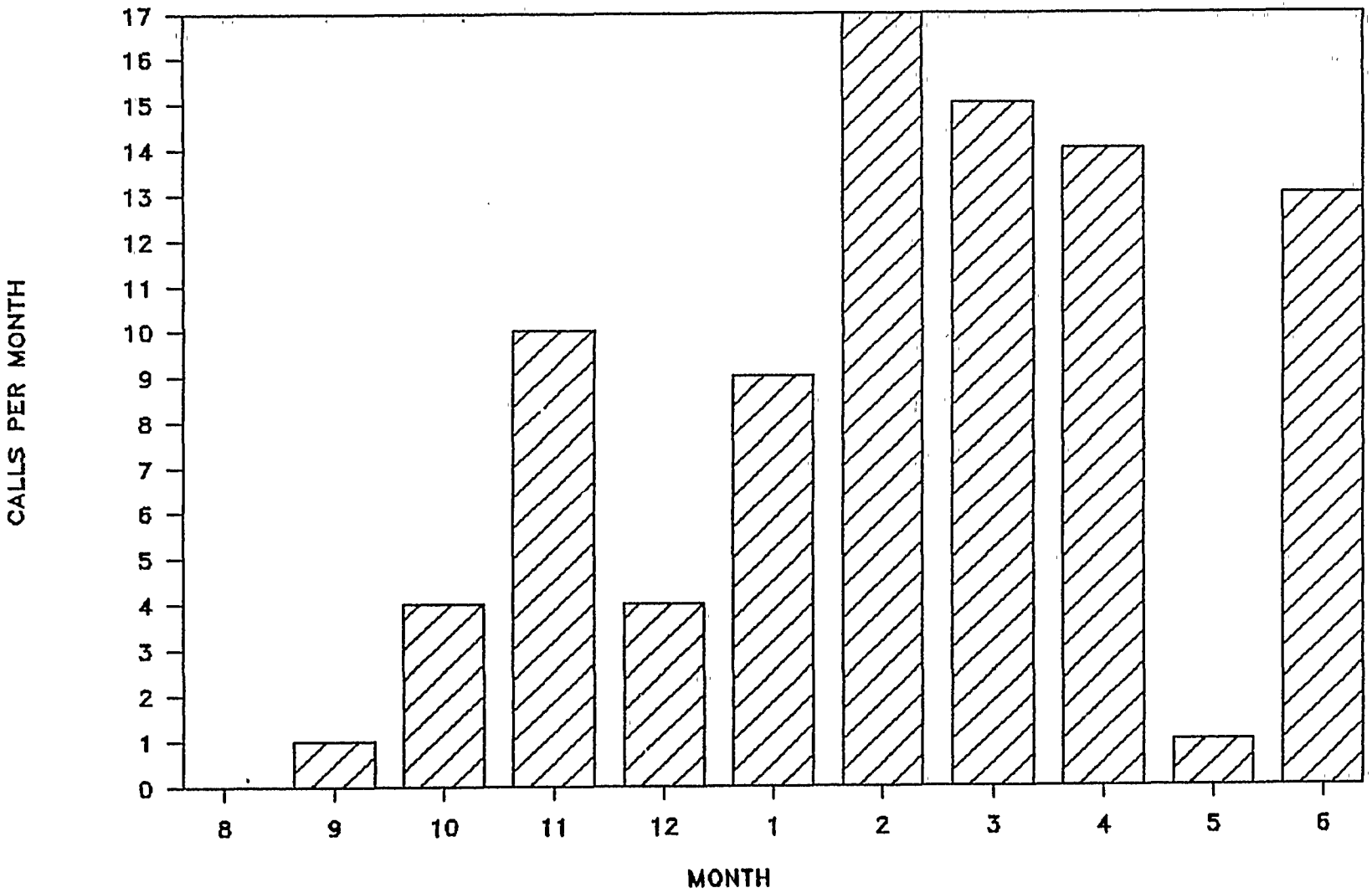

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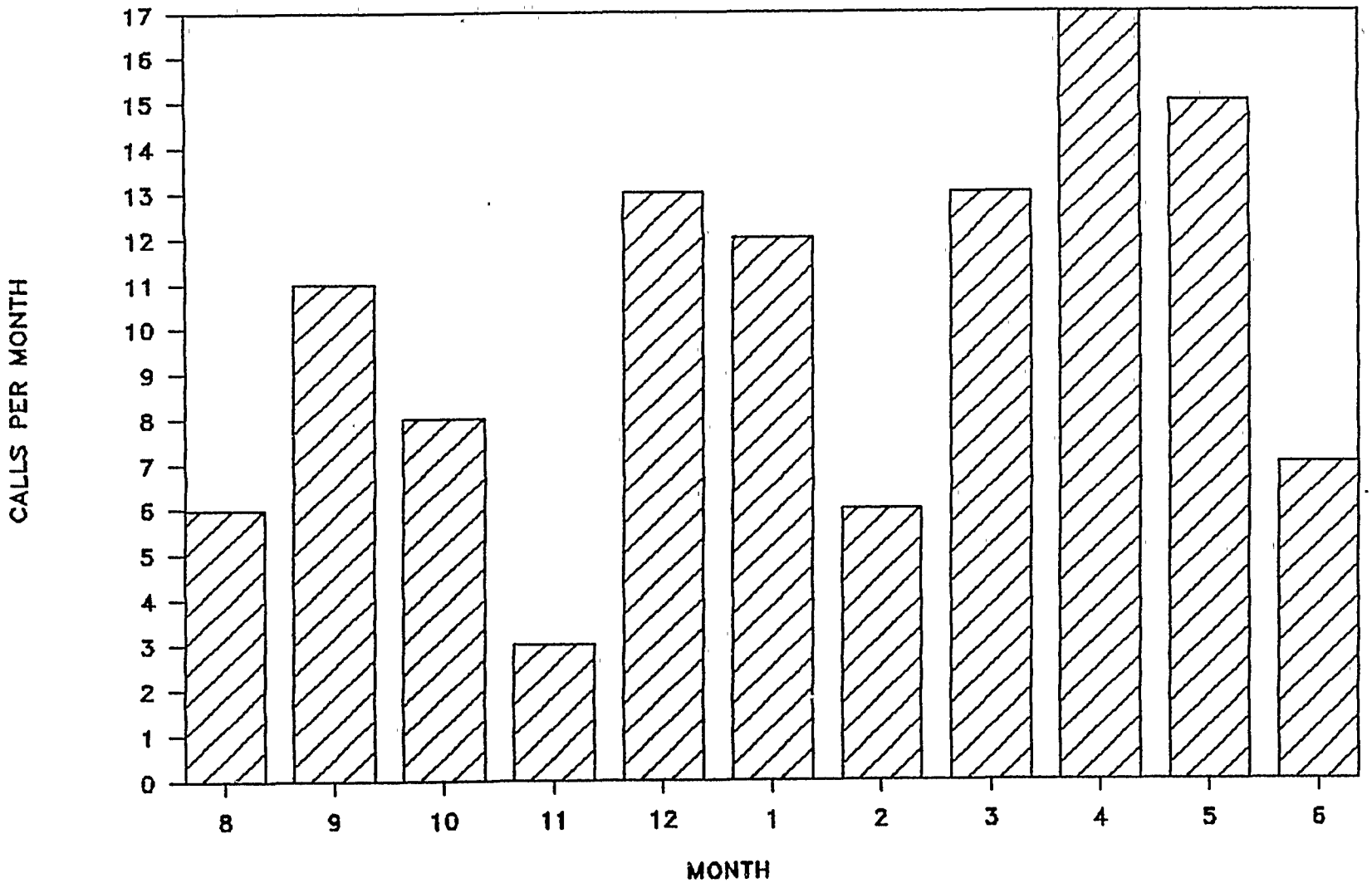

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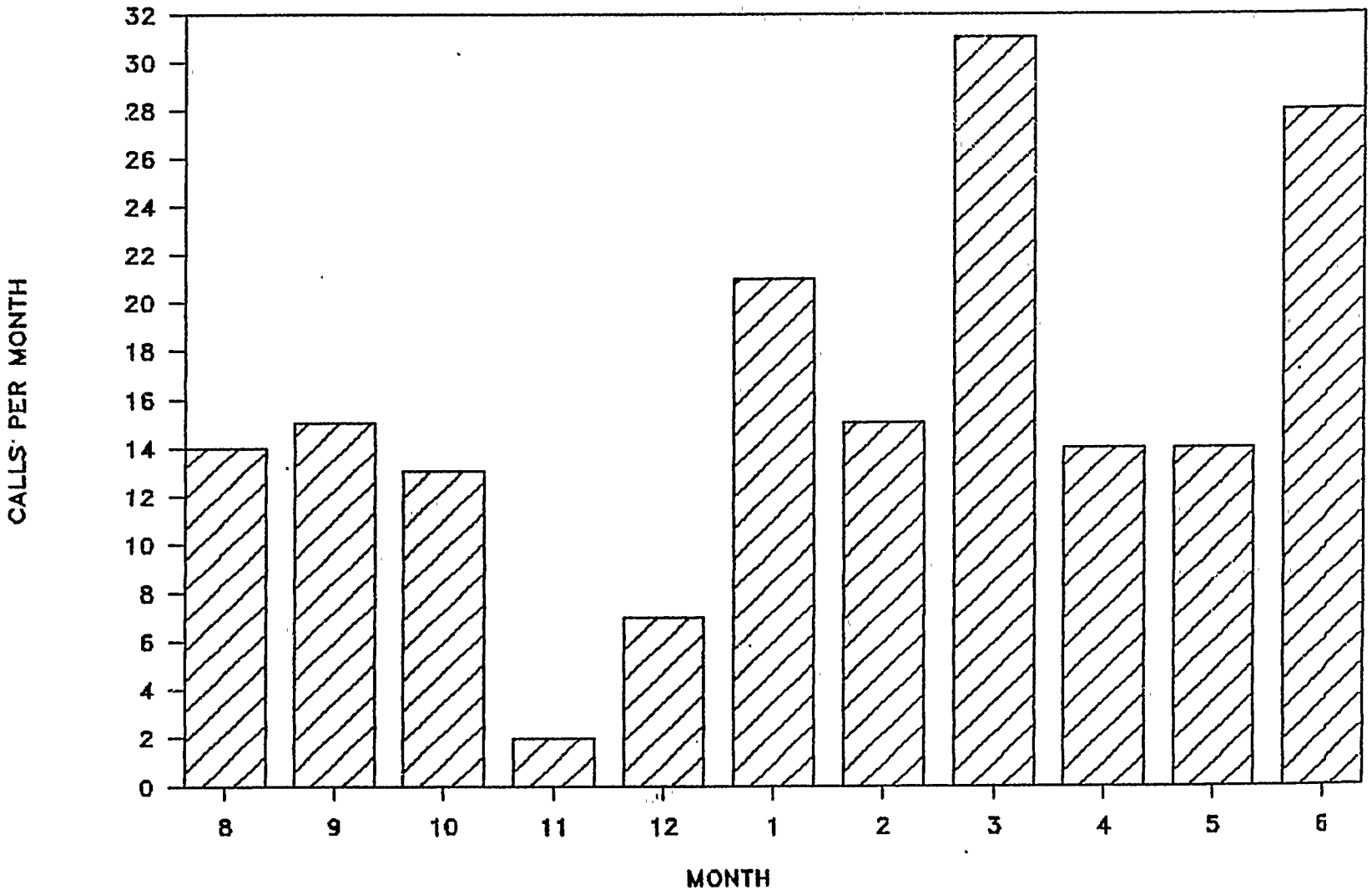

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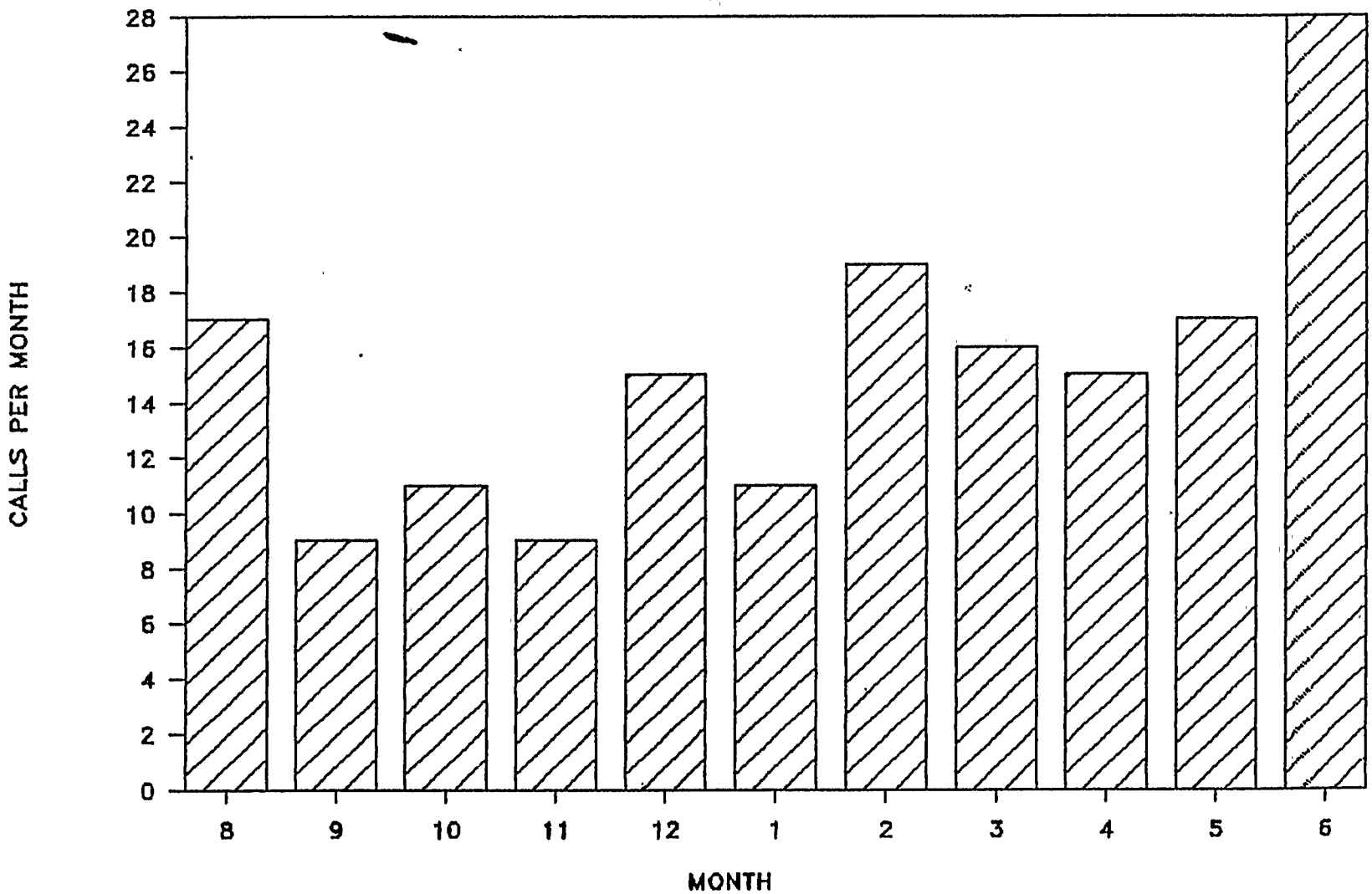

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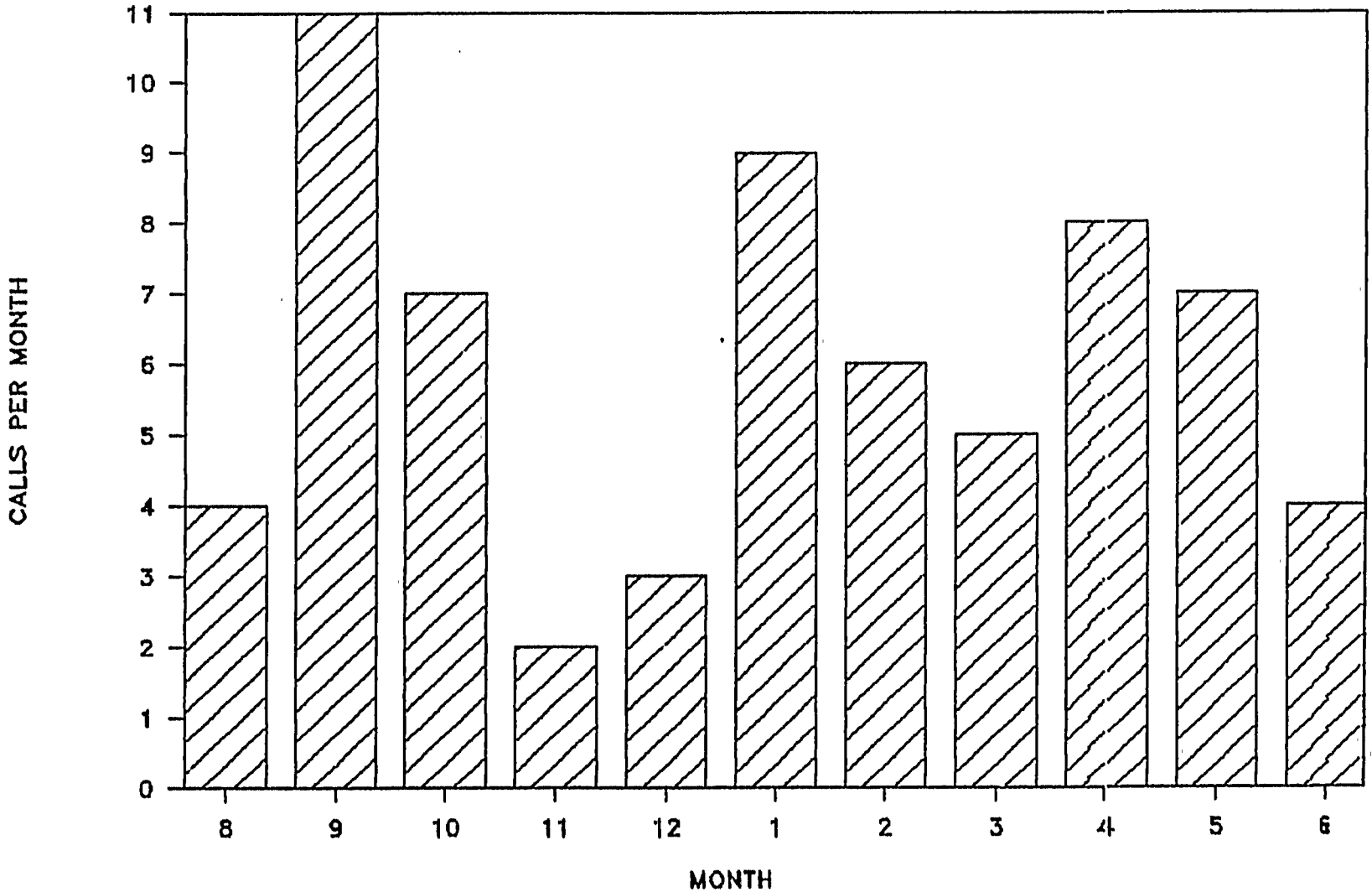

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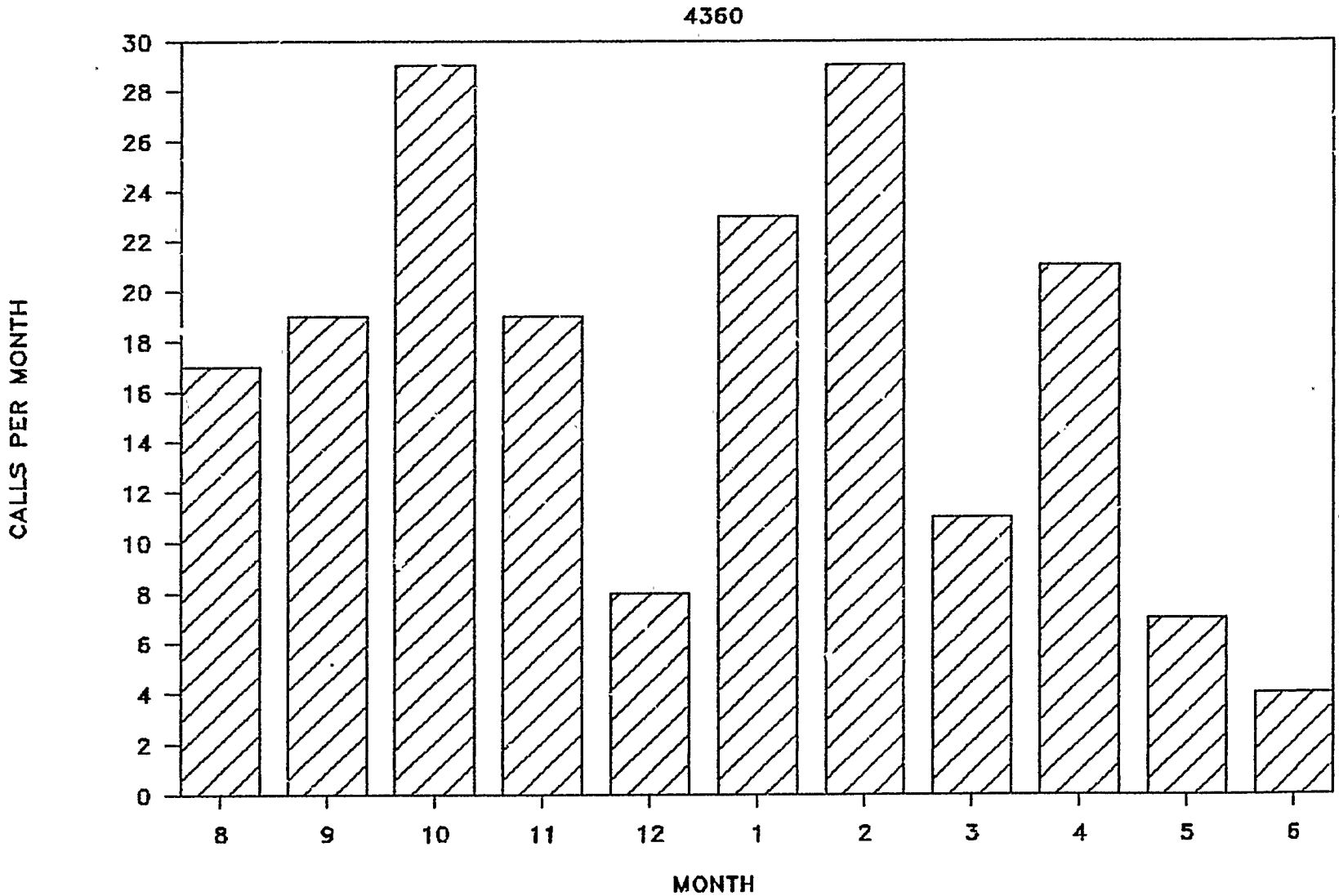

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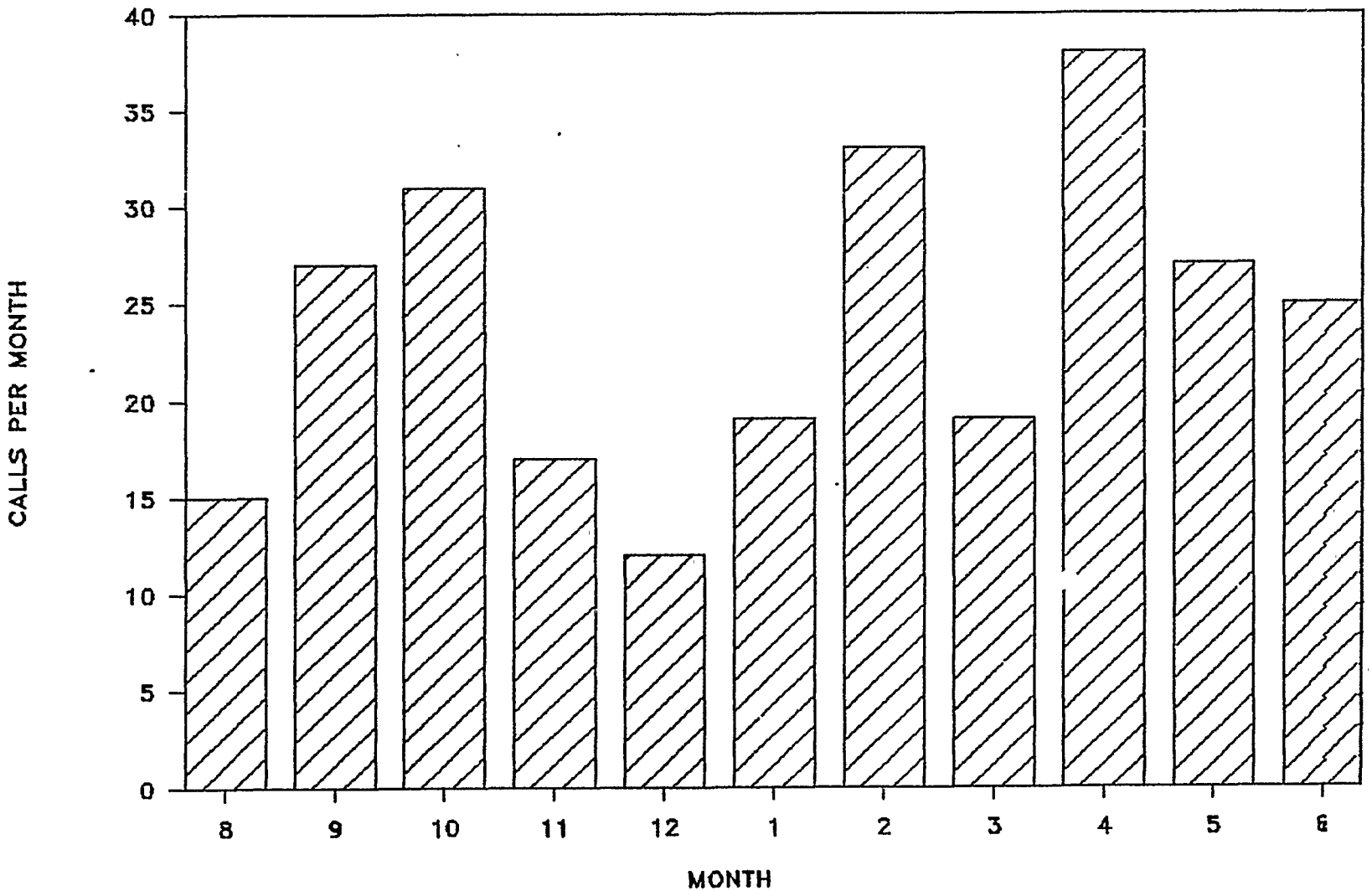

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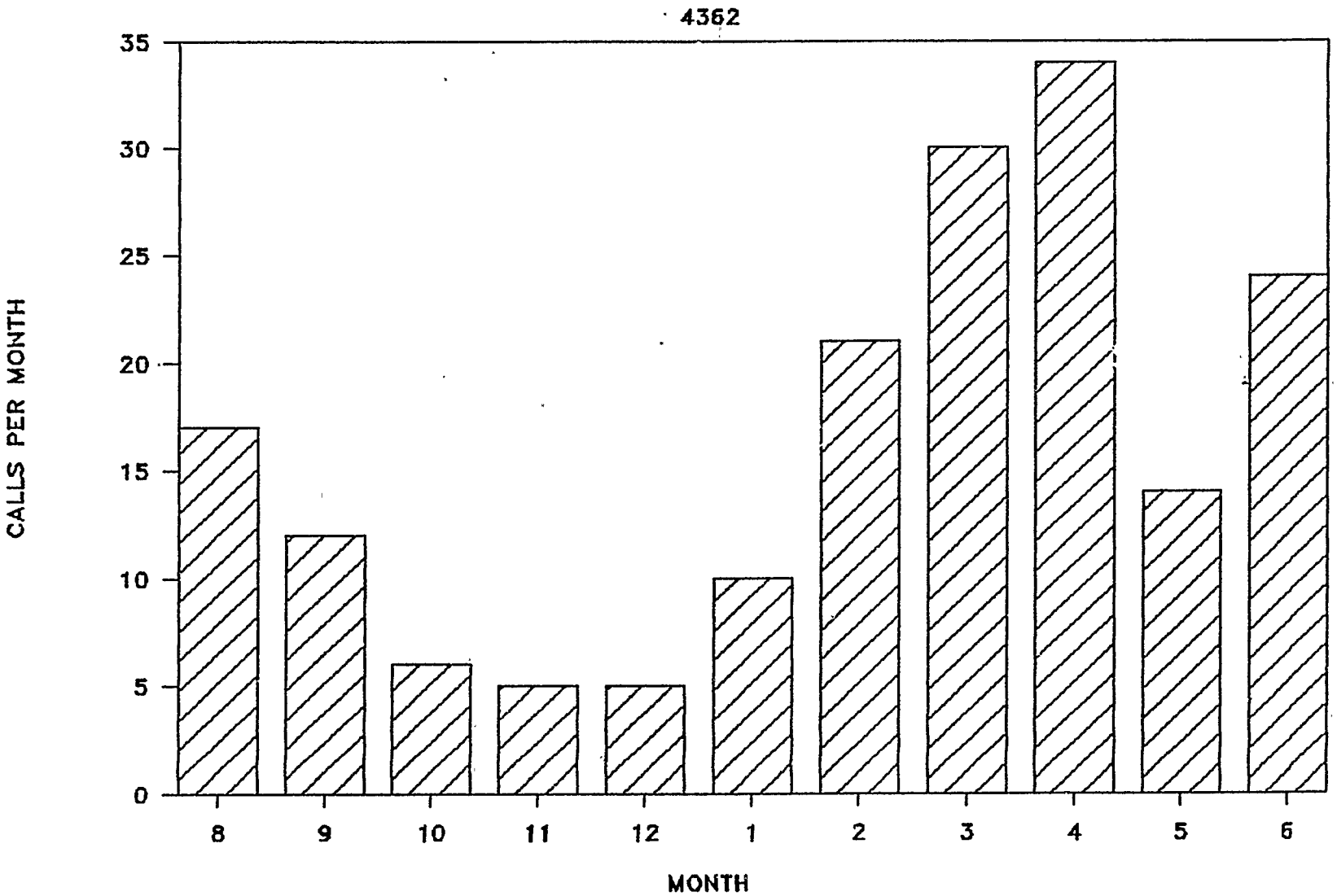

ENGINEERING NOTES

EMPLOYEE Baum Gardner DATE 28 Sept 90 PAGE NO. 1

RCC SUBJECT

The civilian industry has a low spare rate of major units. The goal for the major maintenance bases is to keep the units in the field - working. This is accomplished in two ways:

1) Make sure the units are ACTUALLY REPAIRED SO THAT THE RETURN RATE IS LOW *AND* THAT THE TIME COMPLIANCE REQUIREMENTS UNTIL THE NEXT TEARDOWN ARE HIGH;

2) Move the units through the shop AS FAST AS POSSIBLE.

A problem that the civilian industry deals with regularly is LACK OF MONEY to spend on maintenance...the goal being TO DO THE BEST POSSIBLE JOB AND STILL SAVE MONEY. THE WAY TO REACH THIS GOAL IS TO WORK EFFICIENTLY AND COST-EFFECTIVELY.

THE MILITARY IS NOW BEING FACED WITH BUDGET CRUNCHES, WHICH WILL ONLY GET WORSE AS THE YEARS GO ON.

The age-old system, which includes deep pockets and loose accountability standards, will not work anymore. THERE IS A NEED TO CHANGE THE PROCESS and, in some cases, THE BASIC WAY OF THINKING. The budget of the future will create a necessity to be more efficient and to keep spares in the field...rather than having to buy new UFCs "as an emergency."

Specifically, it is necessary to have an accurate plan for each repair shop to follow. Technical data must reflect daily operations according to military rules and regulations. There is no way the UFC shop should be operating with tech data that has little, if anything, to do with the way they are actually doing business. There is, indeed, a major difference between on-condition maintenance and complete overhaul or even "return to specifications."

The civilian industry must report to the FAA, so (by law) airlines and third-party maintenance organizations have clear-cut regulations to follow. These maintenance documents are blessed by the FAA, and are also the documents to which their actual practices are compared during inspections.

In order to make sure that shops are adhering to the established technical data (this is assuming that correct tech data WILL be written), there must also be random inspections done at various points in the process BY SOMEONE OUTSIDE THE SHOP's CHAIN OF COMMAND.

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EMPLOYEE Baumgardner DATE 28 Sept 90 PAGE NO. 2

RCC Individual parts *must* be tracked all the way through the process. SUBJECT

This should include notating what was done to the part. **BAR CODING**, as part of a computerized tracking system, IS AN EASY WAY TO IMPLEMENT SUCH A PROCESS.

Having this kind of indepth history available will also make it easier to do the research necessary to solve the quality problem. According to records, the amount of time in the field between depot-level maintenance visits is about 1/3 of Bendix's predictions: 600 hours instead of 1600! Some of this deviation may be due to optimistic expectations on the part of Bendix; however, those kind of statistics would not be tolerated in the civilian industry.

A study needs to be done together with the vendor. New procedures should be written to detail how the process actually works, and then realistic statistics for the units should be calculated. Given the current data, it would seem that time-compliance tasks should be adjusted to accommodate the high failure rate in the field.

The absence of applicable tech data more than likely has a direct relation to the high number of UFCs coming back with failures so soon after repair. This problem goes deeper than "HIGH INFANT MORTALITY RATES." This also suggests that there is not enough separation between Q.C. personnel and the Production Department.

CLEARLY, IT IS IMPOSSIBLE TO PINPOINT PROBLEMS IN THE PROCESS OF A SHOP (OR THE QUALITY OF WORK PUT OUT) IF THERE IS NOT A PARTS ACCOUNTIBILITY PROGRAM, NOR A SERIOUS QUALITY CONTROL PLAN.

On-Condition Maintenance (OCM) programs have been established by many of the airlines - and then abolished. One of the reasons for this is that units were not able to remain in the field as long before being brought in for another problem or a time-compliance inspection. OCM works much better in the airframe department than in the engine department.

Actually, an OCM program might work efficiently for the Air Force because of the huge inventory of spares...if it is possible to get the majority of the inventory out in the field, working. I do not have exact numbers, but I do know that the USAF's inventory (spare level) is substantially higher than the civilian industry's. On the other hand, the percentage of that inventory that is ACTUALLY FUNCTIONING IN THE FIELD IS WAY TOO LOW.

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ENGINEERING NOTES

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EMPLOYEE Baumgardner DATE 28 Sept 90 PAGE NO. 3

RCC MATPEA SUBJECT General overviews

FOR THE PRICE OF ALL THESE REPAIRABLE ASSETS, THE AIR FORCE COULD BUY _____! (Pick something that everyone can relate to longingly) ..... X # of BMWs?

The current OCM team is moving in the right direction towards creating a functional data base for the UFCs. It is still impossible to have an accurate history of each UFC if there is only information regarding the *type* of previous write-up, but with no data about what was done to repair said item.

Plans & Scheduling should start the process on each UFC to be inducted by checking its history before it is released by DS. But, how can Production be prepared to handle recurring problems if there are no systems in place to actually "track incoming repairable assets by serial number?" (Nadeau, Jul 90)

In the civilian industry, the Planning Department takes an active role in accountability, parts tracking and workflow. Call it what you will, there is no tolerance for working "easier" jobs first or putting off particular jobs because of "parts availability." Workflow is established in planning; deviations must be explained by floor managers.

In the Plans & Scheduling Departments of civilian companies, there is limited technical training, but these personnel **CAN**, AND DO, differentiate between various components and parts. This is learned by studying pictures of units shown torn down, as well as from spending time out on the floor tracking part numbers during required "random checks."

Procurement of necessary parts to keep units flowing through in a timely manner should be a priority. Inventory should not be "frozen" unless it is an absolute emergency; most companies had never heard of that happening - ever! When parts availability becomes a problem, yet the parts are actually in the hands of the company (in this case, the Air Force's distribution center, "DS",) the system needs to be changed.

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ENGINEERING NOTES

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EMPLOYEE Baumgardner DATE 28 Sept 90 PAGE NO. 4

RCC MAPFA SUBJECT General Overview

I also suspect there may be some problem in the way that "pending parts waiting" items are handled by MIC. Because a desk drawer is used as a pending file, it is possible that suspense items are not checked on for a "re-request" often enough. (One has a tendency not to flip through lots of little pieces of paper on a daily basis when other work takes the attention.) Since the Air Force has computer capability, it would be a good idea to transfer the suspense or pending files to a computer program - perhaps the Tracker II program could accommodate this.

Once new procedures documentation is written, there is another area which will become easier to manage: Training of new personnel.

For the airlines and 3rd-party companies, the FAA requires complete training records be kept on each mechanic. This has prompted these civilian organizations to develop detailed training programs over the years. A single mentor (or the last person to fill that slot) does not have to be attached to the new employee because the supervisor can assign different people to train and sign-off each task.

There are many ways to increase productivity and quality. But in order for these new ideas to take hold, upper management must make the changes. Decisions will have to be made to try the experimentation necessary to pinpoint the big problems in the system. Parts accountability and the creation of an accurate manual for current maintenance practices are the two places to begin solving the problems.

Being accountable, by having procedures and tracking methods, will undoubtedly make some people within the system very nervous. Such a system will show quite quickly where flaws in the process are hidden.

Unfortunately, if the low spare rate in the field is ever to be brought up to an acceptable amount, and the quality of those spares is to be increased, an accountability method will have to be established.

Question: How can one be sure that increased production rates and lowered flowtime and WIP levels are not due to a large # of units that had been WIP for months which finally came through during this period of time?

DDB SECTION CODE _____ DDB PAGE NO. _____

030094

4.0

WORK FORCE

provided by OCM Team

UNIFIED FUEL CONTROL PRODUCT

VIA ON-CONDITION MAINTENANCE

1. ON-CONDITION MAINTENANCE, (OCM), IN SIMPLE TERMS IS "FIX WHAT"S BROKE". SINCE IT IS VERY IMPORTANT TO KNOW THE HISTORY OF A CONTROL, MUCH AS A PHYSICIAN'S PATIENT FILE, A DATA BASE CONTAINING THE HISTORY OF EVERY UFC WORKED AT SA-ALC/MATPF IS MAINTAINED IN THE OCM TEAM OFFICE. THERE UPON RECEIPT OF A REPARABLE ASSET, THE OCM TEAM REVIEWS THAT HISTORY FILE TO DETERMINE IF THE UFC WILL REQUIRE SPECIAL ATTENTION IN THE FORM OF INDUCTION INTO THE "SPECIAL INVESTIGATION TEAM", (SIT), SUCH AS CONTROLS THAT DO NOT HAVE A DELTA TIME OF AT LEAST 50 OPERATING HOURS, OR DISPLAY A CHRONIC PROBLEM THAT HAS NOT BEEN DUPLICATED AT THE DEPOT. THE HISTORY ALSO PROVIDES THE OCM TEAM WITH THE PRESENT CONFIGURATION AND ASSISTS IN DETERMINING THE REQUIRED TCTO INCORPORATIONS REQUIRE DURING THIS DEPOT VISIT.

2. FOLLOWING THE HISTORY REVIEW, THE CONTROL UNDERGOES EXTERNAL CLEANING, AND "AS RECEIVED INSPECTION". THIS INCLUDES BUT IS NOT LIMITED TO EXTERNAL VISUAL INSPECTION STATIC ELECTRICAL CHECK, CONTAMINATION CHECK, AND HANDS-ON INSPECTION TO IDENTIFY AS TO WHICH MODIFICATIONS HAVE BEEN PREVIOUSLY ACCOMPLISHED.

3. RAR OR (RUN AS RECEIVED) IS PERFORMED AS A DIAGNOSIS FOLLOWING THE AS RECEIVED INSPECTION. TEST PARAGRAPHS RELATED TO THE REPORTED ENGINE MALFUNCTION ARE PERFORMED IN ORDER TO DUPLICATE THE 'CUSTOMER'S COMPLAINT. A A LOCALLY DEVELOPED RAR, 'SA-ALC RAR' IS PERFORMED AS A HEALTH CHECK THAT FUNCTIONALLY TESTS ALL SYSTEMS OF THE UFC. THIS HEALTH PROVIDES THE OCM TEAM WITH A GOOD LOOK AT THE INTEGRITY OF THE ENTIRE CONTROL AN AFFORDS THE THE TOOL TO MAKE A REPAIR DIRECTION WITH MINIMAL DELAYS AND/OR BACKTRACKING. IT FURTHER ALLOWS THE TEAM TO IDENTIFY PROBLEMS NOT IDENTIFIED BY THE FIELD BUT WOULD LIMIT THE MEAN TIME BETWEEN UNSCHEDULED REMOVAL, (MTBUR, SUCH AS BORDERLINE FUEL FLOWS, ELECTRICAL COMPONENT FUNCTIONAL RESPONSE,ETC..

4. USING THE ABOVE DATA THE OCM TEAM MAKES THE DIRECTION OF WORK WHICH COULD RANGE FROM "MINOR ADJUSTMENTS" TO "LAST NUT AND BOLT". THE CONTROLS MIGHT BE REPAIRED ON THE

050061

TEST STAND OR REMOVED FROM THE TEST STAND FOR REPAIR/MODIFICATION. FOLLOW-UP INSTRUCTIONS ARE PROVIDED THROUGHOUT THE ENTIRE PROCESS AS NECESSARY.

5. AFTER MAKING THE TREK THROUGH THE REPAIR PROCESS, A FINAL LOOK AT THE COMPLETED WCD, (WORK CONTROL DOCUMENTS) IS PERFORMED TO ASSURE THAT ALL WORK AND MODIFICATIONS DUE DURING THIS VISIT WERE IN FACT ACCOMPLISHED AND THAT THE IDENTIFICATION PLATE REFLECTS THESE ACCOMPLISHMENTS. IN ADDITION, DATA GLEANED FROM THE COMPLETED WCDS AND STORED IN THE OCM TEAM'S DATA BASE AS WELL AS INPUT IN TO CEMS, (CONSOLIDATED ENGINE MANAGEMENT SYSTEM), IN THE FORM OF AN AFTO FORM 95, "SIGNIFICANT HISTORICAL DATA". THIS ASSISTS THE FIELD IN RECOGNIZING THE HISTORY OF THE CONTROL AND ANSWERS, FOR THE MOST PART, WHAT WAS DONE TO UFC DURING IT'S LAST DEPOT VISIT.

6. PLEASE NOTE THAT THIS IS JUST A BRIEF SUMMARY OF THE REPAIR PROCESS OF THE UFC. PRIORITIES OF THE REPAIR PROCESS CHANGE RAPIDLY AND AT LEAST DAILY. FOR ANY FURTHER INFORMATION POINT OF CONTACT IS FRANK A. MANN, MATPF, OCM TEAM CHAIRMAN, 54491.

Assuming Training Class Continues (14 PEs)

Month	Reg	OT	%	Reg	OT %
Jan	21744.9	4071.9	18.7%	34701	11.7%
Feb	19583.1	4178.9	21.3%	30349	13.8%
Mar	22134.0	4220.5	19.1%	33394	12.6%
Apr	20393.0	4052.2	19.9%	31599	12.8%
May	19827.2	3857.2	19.5%	34295	11.2%
Jun	17953.2	5278.6	29.4%	31973	16.5%
Jul	15958.2	5284.6	33.1%	33268	15.9%
Total	137593.6	30943.9	22.5%	229579	13.479%

Model PEs

Repair	60	38
Testing	73	48
Work Days	5	2

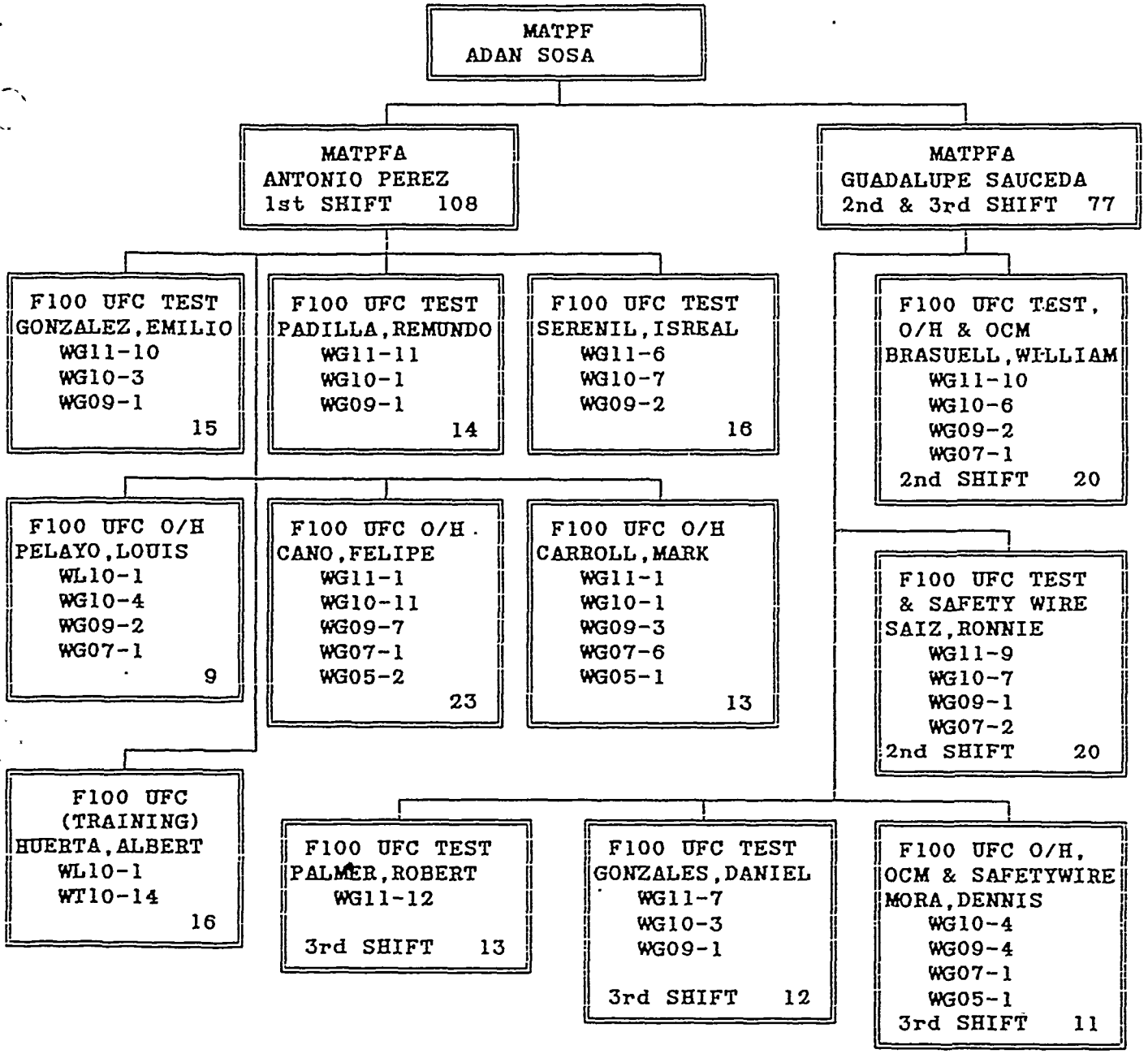
Man-days/Week

Repair	300	76	
Testing	364	96	
Total	664	172	25.9%
Multiplier	345.9	179.9	

Targets:	2%	4592	
	5%	11480	

	Same	2%	5%
New Mandays	664	26	64
New Model PEs	133	13	32

OT Ratio				Leveled		50002s	Heavy
WG 00	44.2%	6	14	3	8	0	3
WG 09	3.5%	1	1	1	4	0	0
WG 10	18.6%	2	6	1	4	0	0
WG 11	33.7%	4	11	8	16	13	29
WG SW	0.0%	0	0	0	0	0	0


MATPF
ADAN SOSA
MATPFA
ANTONIO PEREZ
1st SHIFT 108
MATPFA
GUADALUPE SAUCEDA
2nd & 3rd SHIFT 77
F100 UFC TEST
GONZALEZ,EMILIO
WG11-10
WG10-3
WG09-1
15
F100 UFC TEST
PADILLA,REMUNDO
WG11-11
WG10-1
WG09-1
14
F100 UFC TEST
SERENIL,ISREAL
WG11-6
WG10-7
WG09-2
16
F100 UFC TEST,
O/H & OCM
BRASUELL,WILLIAM
WG11-10
WG10-6
WG09-2
WG07-1
2nd SHIFT 20
F100 UFC O/H
PELAYO,LOUIS
WL10-1
WG10-4
WG09-2
WG07-1
9
F100 UFC O/H
CANO,FELIPE
WG11-1
WG10-11
WG09-7
WG07-1
WG05-2
23
F100 UFC O/H
CARROLL,MARK
WG11-1
WG10-1
WG09-3
WG07-6
WG05-1
13
F100 UFC TEST
& SAFETY WIRE
SAIZ,RONNIE
WG11-9
WG10-7
WG09-1
WG07-2
2nd SHIFT 20
F100 UFC
(TRAINING)
HUERTA,ALBERT
WL10-1
WT10-14
16
F100 UFC TEST
PALMER,ROBERT
WG11-12
3rd SHIFT 13
F100 UFC TEST
GONZALES,DANIEL
WG11-7
WG10-3
WG09-1
3rd SHIFT 12
F100 UFC O/H,
OCM & SAFETYWIRE
MORA,DENNIS
WG10-4
WG09-4
WG07-1
WG05-1
3rd SHIFT 11

040062

ENGINEERING NOTES

EMPLOYEE P Parker DATE 6/25/90 PAGE NO. 1

RCC MATPEA SUBJECT Manpower

6/25/90 - Monday

Susan Schattle provided me with information she obtained pertaining to manpower utilization. The data is contained on several printouts which list the RCC's personnel roster by name, as well as the total hours worked, and the various tasks they performed for the month of May. Ms. Henderson provided me with a data sheet which provides the task description codes which are necessary to interpret these data sheets. Unfortunately, we need a specific breakdown of how much each worker in the RCC charged to the major task codes. This data is not contained on any of the sheets which we have obtained so far. Ms. Schattle's contact in MAW for this data is Yolonda Makum, ext 56201. Yolonda has said that she can provide this data at the end of this month. Apparently, she only has access to this information for the current month, the files then being assimilated into other, more general databases. This data is obtained in its base form from the time sheets turned in by the first line supervisors. While I am sure that there are several reports which may list the RCC's manpower availability, Ms. Henderson has asked us to obtain more detailed information for this RCC. This is due to her concern that the available ALC reports may not be accurate in their representation of tasks performed in this RCC. Examples of the above data sheets and various reports are herein included, and are identified with the designator "A".

Ms. Henderson will make an appointment for she and I to meet Jim Grounds tomorrow afternoon. Mr. Grounds is in charge of the Equipment Maintenance area, which is responsible for maintaining and repairing the UFC testing equipment. We will also speak with Roy Evans, who tracks much of the repair data for this equipment.

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040063

ENGINEERING NOTES

EMPLOYEE P Parker DATE 7/2/90 PAGE NO. 5--

RCC MATAFA SUBJECT manpower

7/2/90 - Monday

Mr. Gardner, Mr. Premo, and I went to see Mr. Grounds this afternoon. Mr. Grounds discussed his function in overseeing the equipment maintenance section in more detail than during our previous visit. He also answered some general questions relating to the data which we have collected on machine failures and downtime. Mr. Premo has taken responsibility for the analysis of this data, and will prepare the reports for our test stand specialist, as well as any conclusions to be entered into the DDB or CSR.

I have examined the data which we obtained from Yolonda, relating to manpower utilization and availability (see attached example sheets, designated "D"). I am going to have to contact her for instructions on how to use these printouts. It appears that they are mostly exceptions lists and total hours worked. While these may be what I need to input the manpower and skill data into the resource files for model use, I am unable to interpret these reports to extract the needed data.

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PERSONAL DATA - PRIVACY ACT OF 1974 (PL93-579) FOR OFFICIAL USE ONLY

ACFCM (2) MATPFA (2) RCC TOTAL LABOR ASSIGNMENT REPORT DATE 06-24-80 A-G037G-G61-D2-8G6 PG 589

RCC: MATPFA FOREMAN CODE:

EMPLOYEE NAME	IDENT	MC	DC	SK	DO	SH	SP	STATUS	RCC	DC	SK	DO	FC	SH	SP	EFF DATE	TERM DATE	J-O-N
BRASUELL WILLIAM	[redacted]	C	21		1	2												
GONZALES DANIEL	[redacted]	C	21		1	3												
GONZALEZ EDUARDO	[redacted]	C	21		1	1												
GONZALEZ EMILIO	[redacted]	C	21		1	1												
HUERTA ALBERTO S	[redacted]	C	21		1	1												
MORA DENNIS	[redacted]	C	21		1	1												
PADILLA REYMUNDO	[redacted]	C	21		1	1												
PALMER ROBERT A	[redacted]	C	21		1	3												
PELAYO LOUIS R	[redacted]	C	21		1	1												
SAIZ RONNIE NMN	[redacted]	C	21		1	2												
SERENIL ISRAEL	[redacted]	C	21		1	1												
VILLARREAL RICARD	[redacted]	C	21		1	1												
DUTY CODE TOTALS:								PERSONNEL ASSIGNED 12										
								PERSONNEL BORROWED 0										
								PERSONNEL LOANED 0										
								NET STRENGTH 12										
FIERROS OLGA G	463881741	C	22		1	1												
MORENO BERTHA A	463629337	C	22		1	1												
DUTY CODE TOTALS:								PERSONNEL ASSIGNED 2										
								PERSONNEL BORROWED 0										
								PERSONNEL LOANED 0										
								NET STRENGTH 2										
ANDRADE JOHN C	[redacted]	C	27		1	1												
ARISPE REYES A	[redacted]	C	27		1	1	4											
CASIANO RENE	[redacted]	C	27		1	1	4											
CEDILLO RUBEN G	[redacted]	C	27		1	1	4											
GUERRERO VINCENTE	[redacted]	C	27		1	1	4											
KIELTYKA KENNETH	[redacted]	C	27		1	1	4											
LINDSTROM DAVID C	[redacted]	C	27		1	1	4											
LUNA FRANK	[redacted]	C	27		1	1	4											
MALDONADO PEDRO M	[redacted]	C	27		1	1	4											
OROZCO AURORA S	[redacted]	C	27		1	1	4											
ROBLEDO MARY LOU	[redacted]	C	27		1	1	4											
RODRIGUEZ JESSE P	[redacted]	C	27		1	1	4											
ROSARIO RAUL S	[redacted]	C	27		1	1	4											
SALDIVAR SYLVIA	[redacted]	C	27		1	1	4											
SUNIGA RALPH G	[redacted]	C	27		1	1	4											
DUTY CODE TOTALS:								PERSONNEL ASSIGNED 15										
								PERSONNEL BORROWED 0										
								PERSONNEL LOANED 0										
								NET STRENGTH 15										
LUEVANO JUAN	466540320	C	39		1	1	76	BORROWED FROM	MATPFA	11	HF	1	A4	1		90169	90181	
DUTY CODE TOTALS:								PERSONNEL ASSIGNED 0										
								PERSONNEL BORROWED 1										
								PERSONNEL LOANED 0										
								NET STRENGTH 1										
F/C TOTAL:								NET STRENGTH 30										

Attachment B

040065

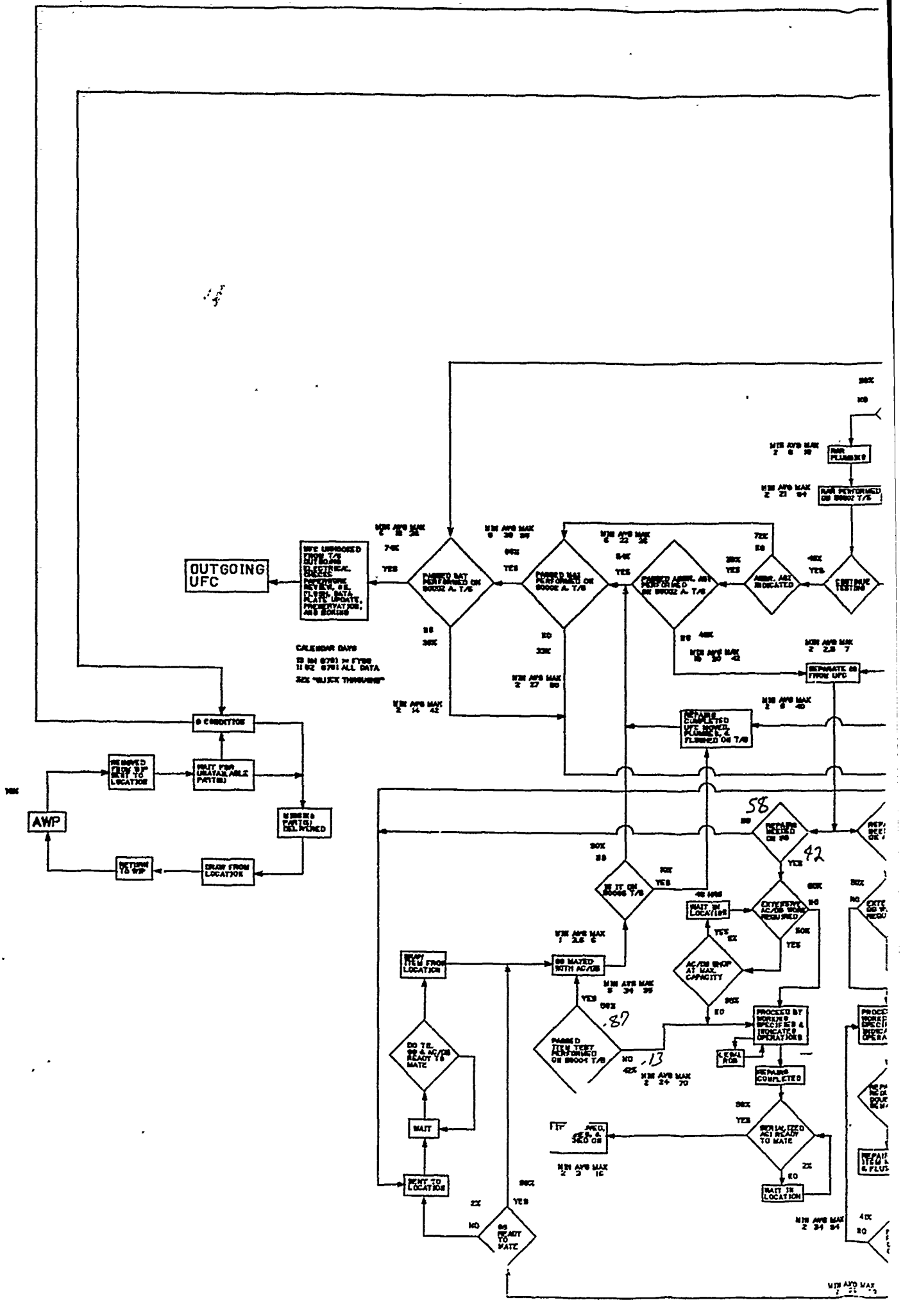
37

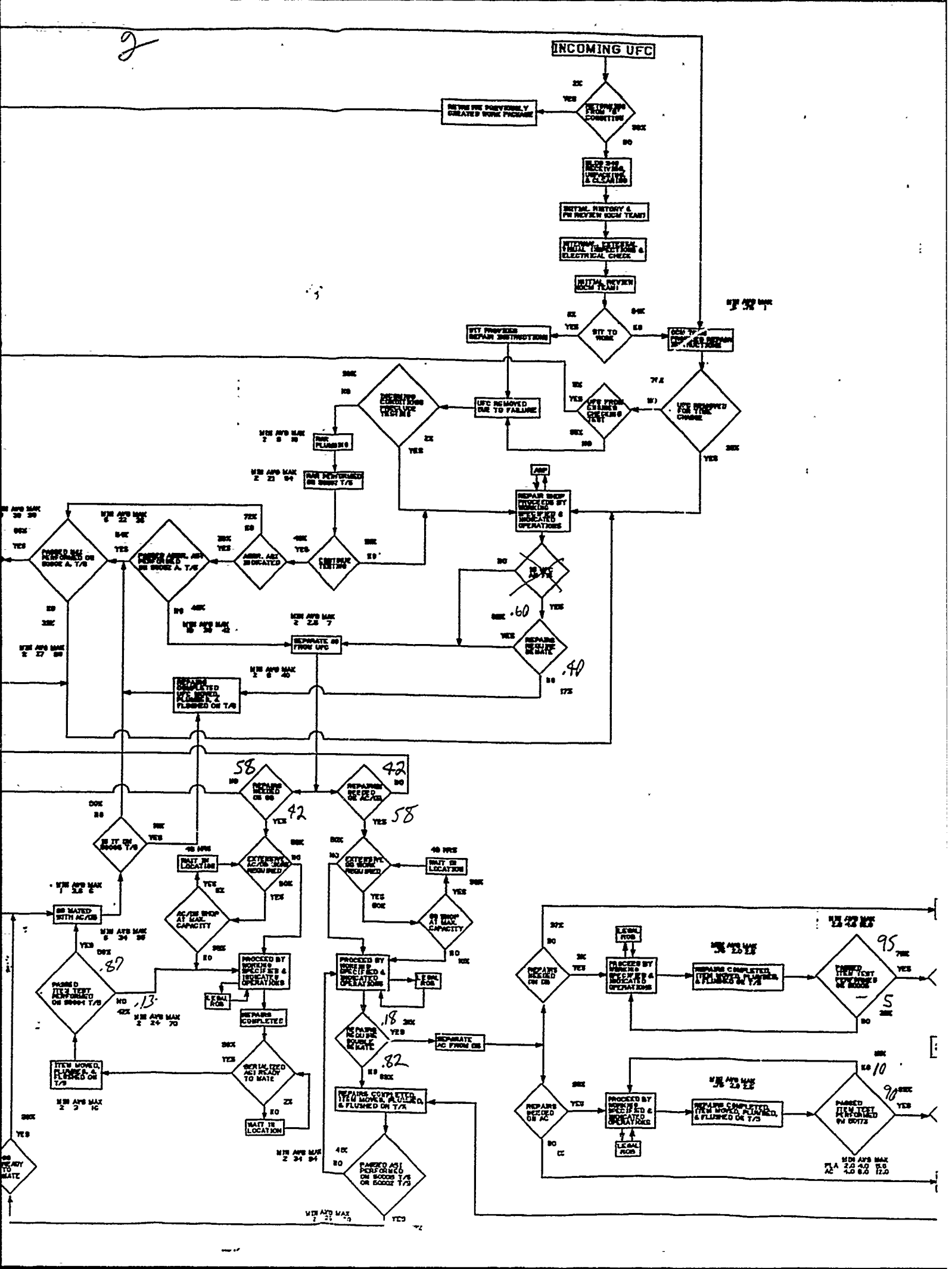
Acc. MATFFA — Actual Indirect Labor Factors (FY90) — Date: 06-30-90 — A-G031G-EH1-M1-86H

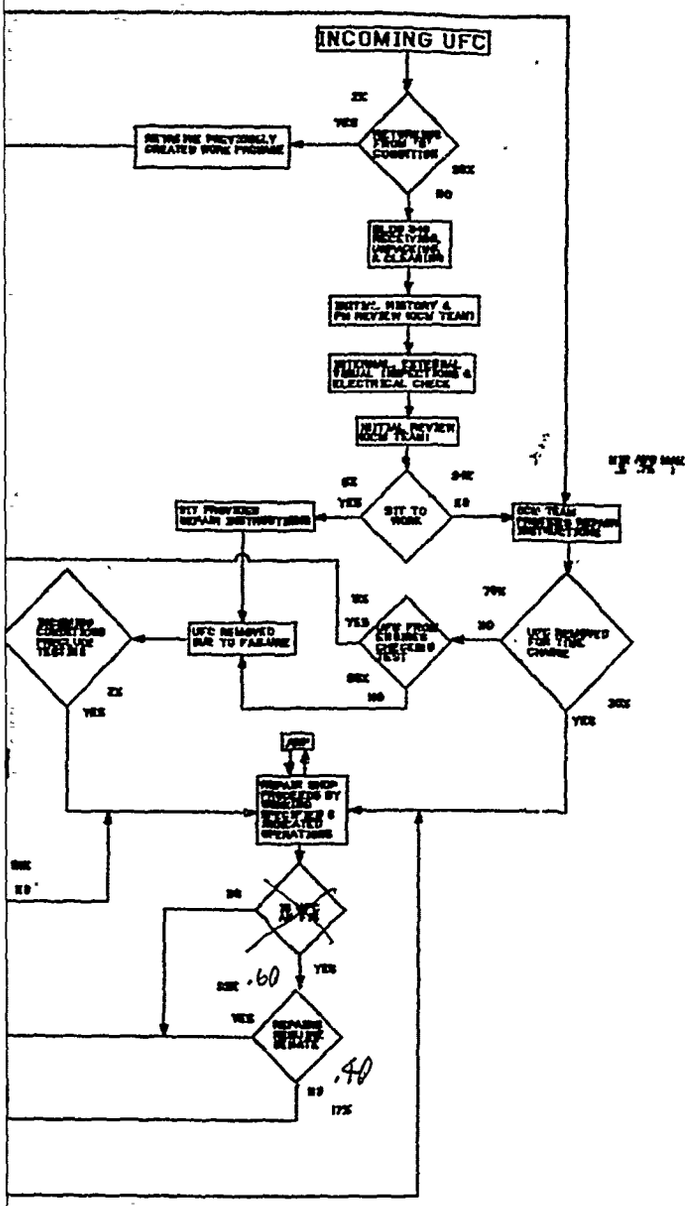
DC		ACT OCT	ACT NOV	ACT DEC	ACT JAN	ACT FEB	ACT MAR	ACT APR	ACT MAY	ACT JUN	BUD JUL	BUD AUG	BUD SEP	QTR 1	QTR 2	QTR 3	QTR 4	FY/TOT
21-SUPV	PCT	13.1	10.7	17.9	10.7	10.5	9.6	11.7	12.7	18.0	12.1	11.1	11.2	13.6	10.3	13.4	11.4	12.1
	HRS	3211	2410	3103	2774	2505	2540	2850	3017	3724	2520	2760	2280	8724	7819	9591	7560	33694
22-CLERKS	PCT	1.6	1.5	2.7	1.4	1.7	1.2	1.6	3.0	2.0	0.8	0.7	0.7	1.9	1.4	2.2	0.8	1.6
	HRS	403	338	460	384	408	316	391	701	469	168	184	152	1199	1088	1561	504	4352
24-EQUIP	PCT	1.7	1.8	3.1	1.6	1.8	1.5	2.1	3.8	2.5	2.2	1.8	2.2	2.1	1.6	2.8	2.1	2.1
	HRS	420	406	540	420	432	392	507	908	578	489	445	445	1366	1244	1991	1356	5957
25-STAND BY	PCT	0.0	0.1	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1
	HRS	0	21	66	128	0	18	0	0	0	0	0	0	87	144	0	0	231
26-MISC	PCT	2.2	2.4	2.1	2.7	2.7	4.8	3.2	5.2	3.6	3.2	2.8	3.2	2.2	3.4	4.0	3.0	3.2
	HRS	538	530	357	709	642	1264	788	1239	832	668	642	642	1425	2615	2859	1952	8851
27-TRNG	PCT	12.9	11.3	17.6	11.7	12.6	11.6	11.3	16.5	18.1	14.3	12.0	14.7	13.6	11.9	15.2	13.8	13.6
	HRS	3158	2534	3048	3014	3003	3053	2769	3897	4216	2990	2990	2990	8740	9070	10882	8970	37662
29-UNION	PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	HRS	3	1	3	1	1	0	3	3	1	8	8	8	7	2	7	24	40
TOTAL-IND	PCT	31.5	27.8	43.8	29.7	29.4	28.8	29.9	41.2	42.3	32.7	28.2	32.1	33.5	28.9	37.7	30.8	32.7
	HRS	7733	6238	7577	7410	8991	7581	7308	9765	9818	6820	7029	6517	21548	21982	26891	20366	90787
31-A/L	PCT	7.3	12.5	40.6	5.8	6.2	9.0	11.0	9.5	12.9	19.5	10.5	9.3	18.1	7.1	11.1	13.0	12.1
	HRS	1786	2818	7031	1507	1470	2377	2688	2246	2988	4070	2610	1890	11635	5354	7922	8570	33481
32-S/L	PCT	4.9	4.8	6.6	4.7	4.2	5.2	4.9	4.0	3.5	3.1	3.3	3.2	5.3	4.7	4.1	3.2	4.3
	HRS	1202	1034	1149	1205	1001	1372	1191	945	809	650	810	650	3385	3578	2945	2110	12018
33-OTHER	PCT	7.2	13.6	8.6	11.9	8.7	0.7	1.3	7.6	3.3	7.6	0.6	7.8	9.8	6.4	4.0	5.0	6.2
	HRS	1768	3048	1488	3072	1584	184	312	1800	760	1585	150	1550	6304	4840	2872	3285	17301
3[illegible]L PR	PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	HRS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3[illegible]OL	PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	HRS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36-M-S/L	PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	HRS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37-M-A/L	PCT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	HRS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL LEAVE	PCT	19.4	30.7	55.9	22.4	17.1	14.9	17.1	21.1	19.6	30.2	14.3	20.2	33.2	18.1	19.3	21.1	22.6
	HRS	4756	6900	9668	5784	4055	3933	4191	4991	4557	6305	3570	4090	21324	13772	13739	13965	62800
TOTAL (IND + LEAVE)	PCT	50.9	58.5	99.7	51.1	46.5	43.7	47.0	62.3	61.9	63.0	42.5	52.3	66.7	47.1	56.9	52.0	55.3
	HRS	12489	13138	17245	13194	11046	11514	11499	14756	14375	13125	10599	10607	42872	35754	40630	34331	153587
DIR		24522	22462	17305	25816	23762	26354	24445	23684	23231	20843	24813	20271	64289	75932	71360	86029	277610
TOT		37011	35600	34550	39010	34808	37868	35944	38440	37608	33968	35512	30880	107161	111686	111990	100360	431197

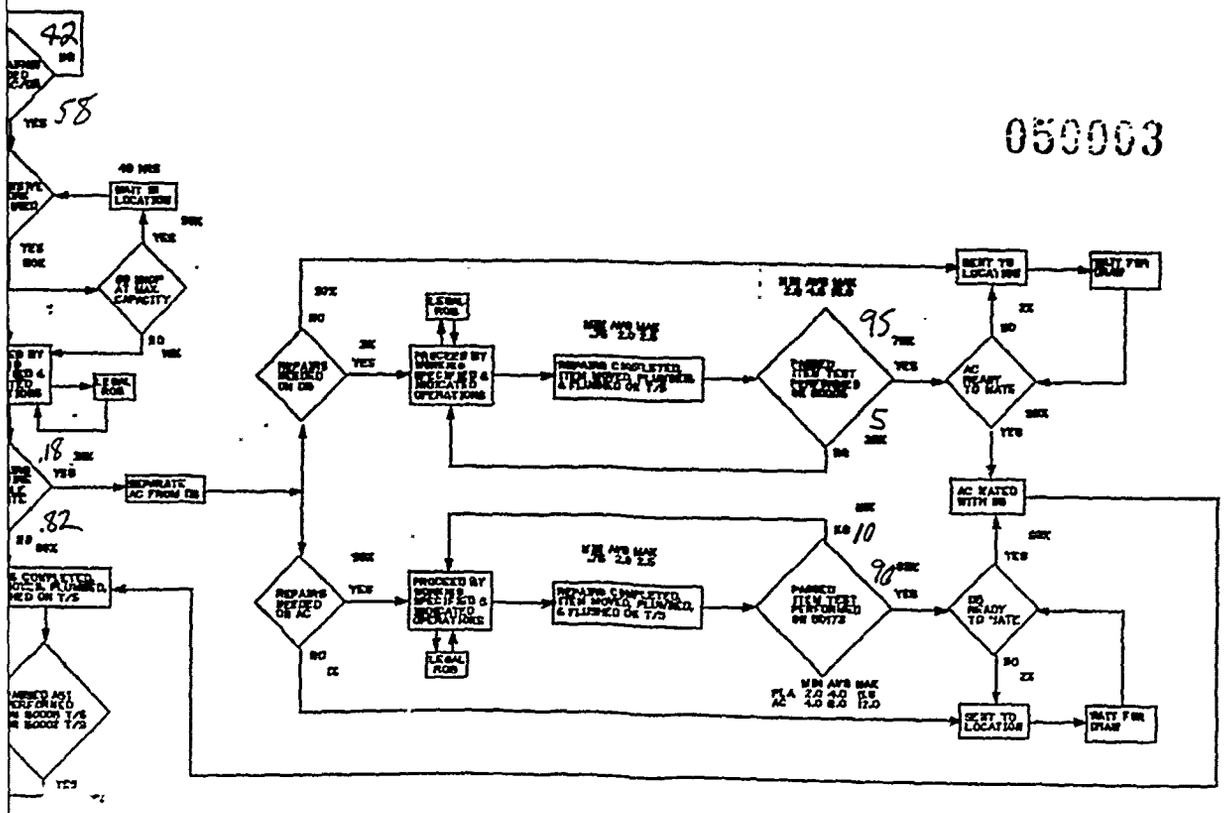
5.0

TECHNOLOGY


OUTGOING UFC
CALENDAR DAYS
AWP
58
42
.87
.13


INCOMING UFC
RETURN TO CONSIGNEE
INITIAL HISTORY & PR REVIEW (QCM TEAM)
INITIAL REVIEW (QCM TEAM)
SIT TO WORK
UFC REMOVED DUE TO FAILURE
UFC REMOVED FOR TIME CHANGE
REPAIR SHOP PROCEEDS BY WORKING SPECIFIED & INDICATED OPERATIONS
REPAIRS COMPLETED ITEM WORKED, PLUMBED, & FLUSHED ON T/S
REPAIRS NEEDED ON OB
REPAIRS NEEDED ON AC/GB
PROCEED BY WORKING SPECIFIED & INDICATED OPERATIONS
REPAIRS COMPLETED
ITEM WORKED, PLUMBED & FLUSHED ON T/S
SEPARATE AC FROM OB
WAIT IN LOCATION
AC/OB SHOP AT MAX CAPACITY
OB MATED WITH AC/GB
PASSED ITEM TEST PERFORMED ON BOOST T/S
PASSED ITEM TEST PERFORMED ON BOOST T/S OR BOOST T/S
LEGAL ROB
.87
.13
.18
.82
.60
.40
.10
.90
.95
.05
.58
.42


INCOMING UFC
SITE TO WORK
UFC REMOVED DUE TO FAILURE
.60
.40


42
58
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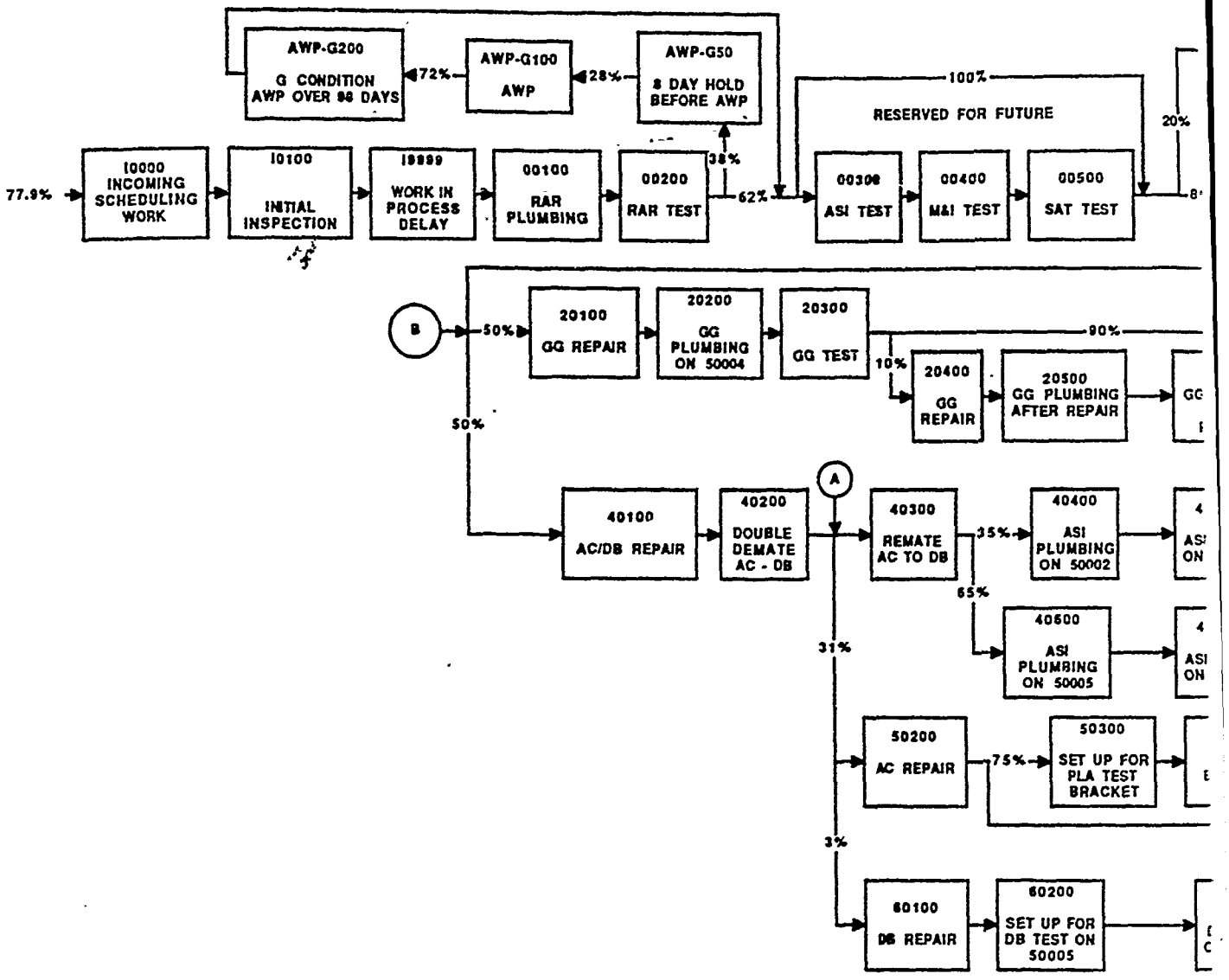
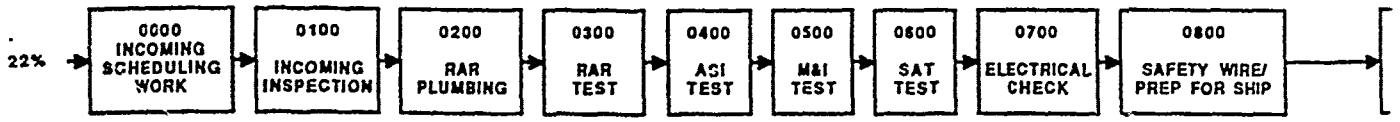
SHIFT TO LOCATION
SHOP AT MAX CAPACITY
REPAIRS NEEDED ON EQUIP
SEPARATE AC FROM EQUIP
REPAIRS NEEDED ON AC
PROCEED BY SHOPS SPECIALIZED & SPECIALIZED OPERATIONS
REPAIRS COMPLETED, ITEM MOVED, PLANNED & FLUSHED ON T/S
PASSED ITEM TEST PERFORMED BY SHOPS
AC READY TO MATE
AC MATED WITH EQUIP
SHIFT TO LOCATION
WAIT FOR START
95
5
10
90

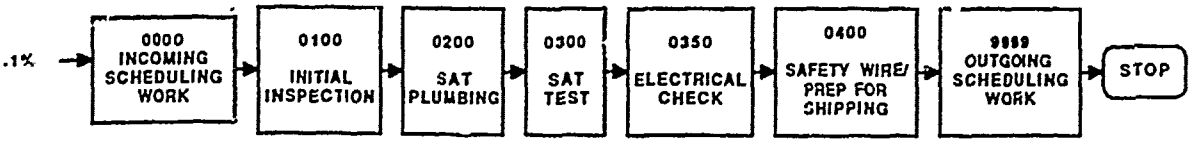
F-15 SLOTHRU



UFC QUICKTHRU



SUPERQUICK THRUS



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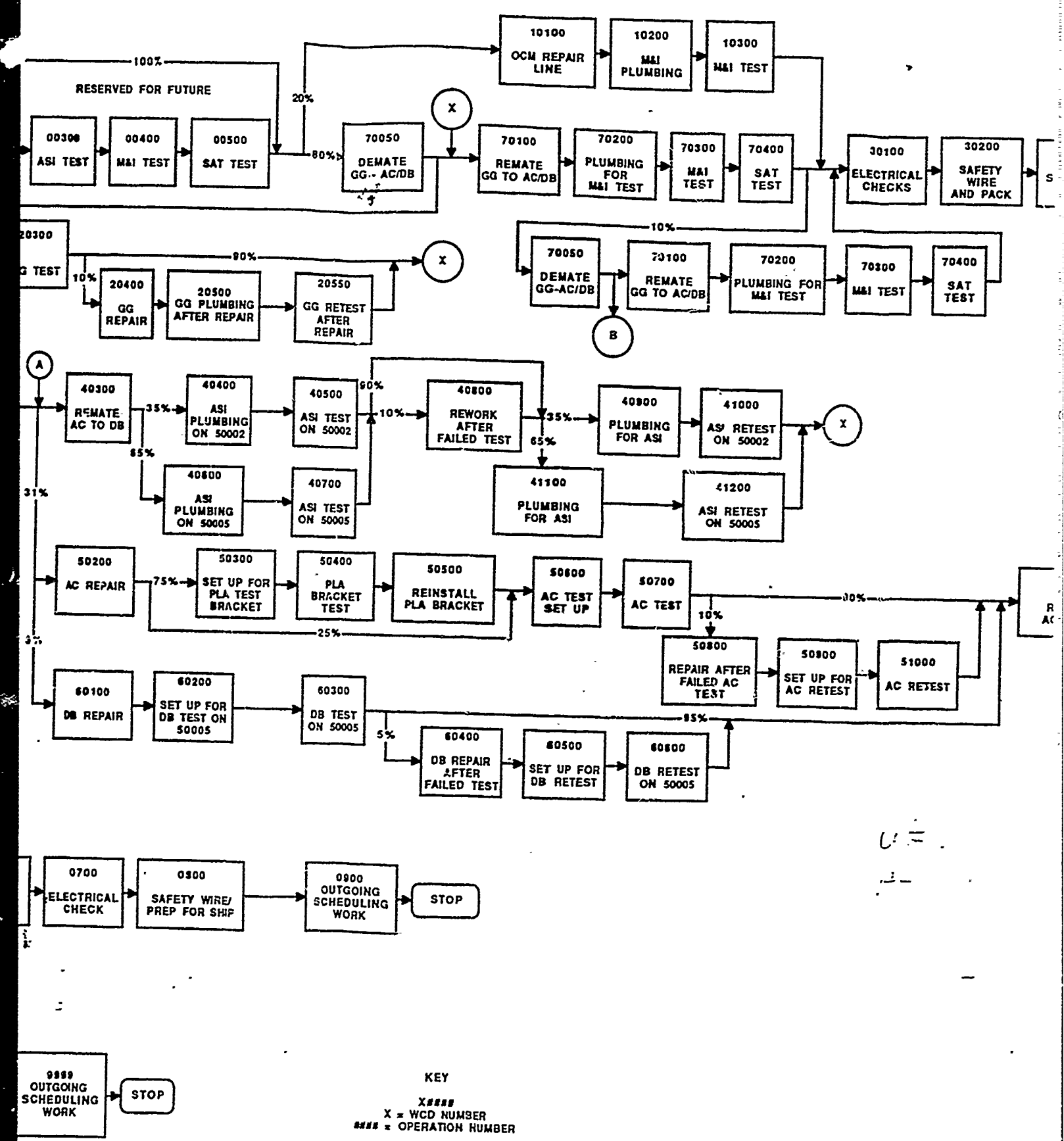
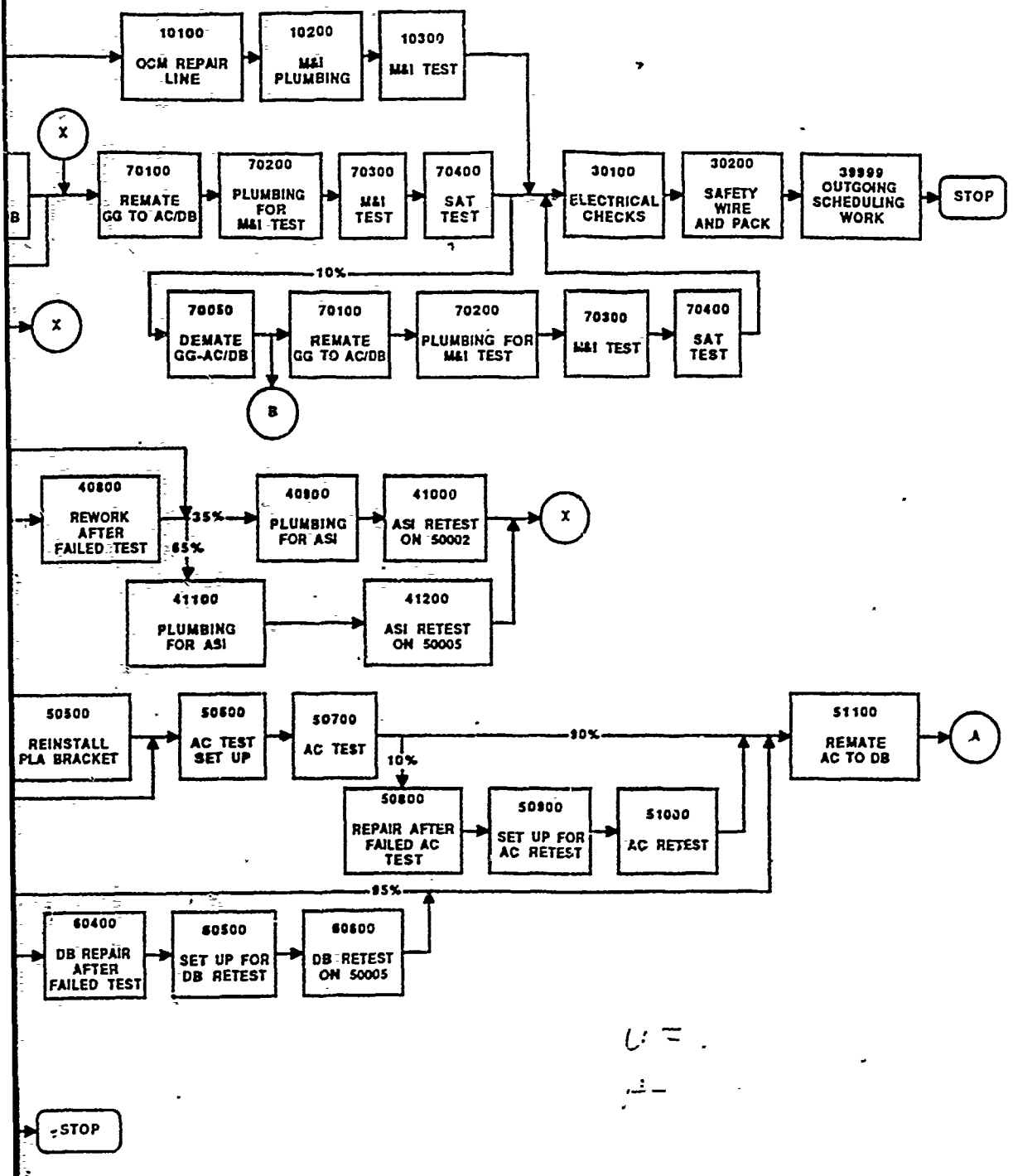
F-15 SLOTHRU



KEY

X####
X = WCD NUMBER
= OPERATION NUMBER



KEY

XXXXX
= WCD NUMBER
OPERATION NUMBER

20821

050064

TC R ** WCD DATA BASE ** 10 MAY 1990

Bradley

1	TC001R 88242	BELLOWS ASSY TRANSDUCER
2	TC002R 88242	UNIFIED FUEL CONTROL
3	TC003R 88242	GAS GENERATOR COVER ASSY
4	TC004R 88242	GAS GENERATOR COMPUTER
5	TC005R 88242	GAS GENERATOR BODY ASSY
6	TC006R 88242	SPEED RECEIVER ASSEMBLY
7	TC007R 88242	CUTOFF VALVE SERVO BODY ASSY
8	TC008R 88242	UFC DCM CMTR I
9	TC009R 88242	UNIFIED FUEL CONTROL/CMTR II
10	TC00WR 39087	UNIFIED FUEL CONTROL
11	TC00XR 89060	GAS GENERATOR CONTROL ASSEMELY
12	TC00YR 88242	AUGMENTOR COMPUTER ASSEMBLY
13	TC00ZR 89013	AUGMENTOR DISTRIBUTION ASSY
14	TC010R 88242	UNIFIED FUEL CONTROL/CMTR III
15	TC011R 88242	UNIFIED FUEL CONTROL/CMTR IV
16	TC012R 88242	VALVE AND COVER ASSEMBLY
17	TC013R 88242	STEPPER MOTORS & SOLENOIDS
18	TC014R 89203	IGNITION WIRING HARNESS
19	TC015R 88242	LOGIC BRACKET ASSY
20	TC016R 88242	TRIM CENTERING BRACKET ASSY
21	TC017R 88242	MANIFOLD FILL SENSOR ASSY
22	TC018R 88242	HEAD SENSOR & BELLOWS ASSY
23	TC019R 88242	AUGMENTOR ROTARY ACTUATOR ASSY
24	TC020R 88242	SEQUENCING VALVE ASSEMBLY
25	TC021R 88242	GAS GENERATOR METERING ASSY
26	TC022R 88242	OUTPUT BODY ASSEMBLY
27	TC023R 88242	RATIO BRACKET ASSEMBLY
28	TC024R 88242	PLA BRACKET ASSEMBLY
29	TC025R 88242	AJ LINK BRACKET ASSY
30	TC026R 88242	TEMPERATURE RECEIVER ASSY
31	TC027R 88242	PB ACTUATOR ASSEMBLY
32	TC028R 88242	SWITCHES & RESOLVERS WIRING
33	TC029R 88242	IGN TIMER BODY & PISTON ASSY
34	TC030R 88242	FLOW DIVIDER VALVE ASSY
35	TC031R 88298	AUG INLET FILTER SLEEVE ASSY
36	TC032R 88286	GAS GENERATOR INLET FILTER
37	TC033R 88242	METERING VALVE PLATE ASSEMBLY
38	TC034R 90051	SHAFT ASSEMBLY
39	TC035R 88242	AUG INLET FILTER ASSY
40	TC036R 88242	RCVV VALVE ASSEMBLY
41	TC037R 88242	F-100 UNIFIED FUEL CTRL (-538)
42	TC038R 88242	VALVE & SLEEVE ASSY
43	TC039R 88242	PRESSURIZING VALVE ASSY
44	TC040R 89244	BODY ASSY PB ACTUATOR
45	TC041R 90101	INSPECTION CHECKLIST (F-100)
46	TC077R 88280	*IMPELLER LAPPING
47	TC108R 89236	*PUMP(B-52H)
48	TC690R 89033	SHAFT, GOVERNOR CAM
49	TCN20R 89299	N2 SHAFT
50	TCOOMR 89348	UFC FLAMEOUT, THRUST LOSS
51	TC050R	Valve servo metering Valve

Listing of WCDs in UFC area.

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RCC SUBJECT T.O. 16 - major topics

Information Systems:

Most of the major airlines and 3rd party mx. companies have computer programs developed for parts tracking - developed within the last five years, except for a few industry leaders.

Many are using bar-coding for tracking. This carries over into job tracking, labor tracking and record-keeping of historical data.

American Airlines has 2 computer programs for use in mx. area; one for ordering/tracking parts and one for tracking manhours on jobs. All of these are linked to their "SABER" system, a mainframe which now encompasses 7 different programs.

Northwest Airlines uses "SEPTRE II", a program created several years ago for Republic airlines. When the 2 airlines merged 4 years ago, Northwest was brought online. This system is one of the best - every part w/ a serial # can be traced throughout the teardown/buildup process, as well as easily pull up history on said part.

United Airlines uses "cosmo" and is currently updating this to "cosmo II". Bar coding is used and parts can be tracked & routed easily. Tags are scanned by each mechanic who works w/ the part, unit or module - thus updates are accurately fed into the system & inspectors, workers or whomever can easily find each ~~part~~ item.

Historical data on parts is tracked by computer. In some cases, a limited amount of data is retrieved automatically when an engine first comes off wing. Each module is broken out separately and units/parts can be researched for past rework/inspection.

Often times, a forced entry is then made to pull up history beyond last MX. Some have "current historical" data

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available on computer, but research-type documentation is kept on microfiche. Records section keeps this info.

Continental airlines uses SEPTRE II for it's mx program. This also serves as a library reference, word cards and historical data on parts. Before beginning work on any module, production meets w/ planning to determine what parts may be needed based on previous work. a heads-up check into inventory will tell them what's available for the job, if necessary. Historical data is also used to track repeat/recurring write-ups. This feeds into the engineering department which, in turn, can update procedures and processes.

Northwest Airlines (Septre II) starts it's historical research in Scheduling when an engine is first found to need heavy mx. Basic engine is assigned a serial # from 1st induction into inventory. This serial # is input into the computer, which generates a listing of all modules (also by serial #) and all parts from each module. Here is found (by part) what type & date of last major mx, what engine (if any) the item was ever on before, any major write-ups on the previous engine (FOD, fire, birdstrike, etc) and any hard time requirements.

Delta Airlines uses a new system called "ARC" which is currently under modification (when completed, it will be "MARC"). Although manual in many areas, historical data has been tracked for several years. Since this doesn't integrate with the rest of the system yet, Scheduling must generate reports based on the engine's designated # and then provide these reports to production during the production planning stage.

Collection of performance data is routinely kept by all airlines, as well as the 3rd-party mx facilities. This is done in a variety of ways. The most manual way is to track labor from completed work cards. Materials are generally tracked

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RCC SUBJECT T.O. 16

through the inventory/supply system. These are all automated/computerized at the airlines). Costs associated with parts and labor are tracked through accounting — often transferred manually to a spreadsheet program. Civilian acft/eng mx operations are extremely cost-consious and do a good job of tracking this info.

Supply Systems:

Procurement deals w/ ordering parts & supplies. The items bought must meet FAA specs or manufacturers specs depending on what category the item falls under. Inspectors accept the parts upon delibery before adding to inventory.

Stock level requirements are based primarily on 3 things: lead time for ordering, projected hard time mx requirements and historical useage data.

Storage locations are generally broken down into 2 areas: depot storage and work storage. Both locations are on site, w/ work storage divided into smaller areas based on repair function. A typical mx depot works on large & small acft w/ engines divided accordingly.

Delta has completely automated their central (depot) store w/ a robotics) system. It is necessary for someone to manually enter the needed part #, but after that, everything is automated. Once removed from the shelf, the system debits the item. The rest of the storage facilities are run manually on the shop floors.

United has started a new concept in floor (work) storage. Their workers developed work stands, used currently in the build-up department only. Bench stock is still supplied centrally on the floor, but parts delivered for build-up are taken directly to assembly location. The stands are designed to hold all needed parts (even nuts & bolts) for each specific job. (picture attached)

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ENGINEERING NOTES

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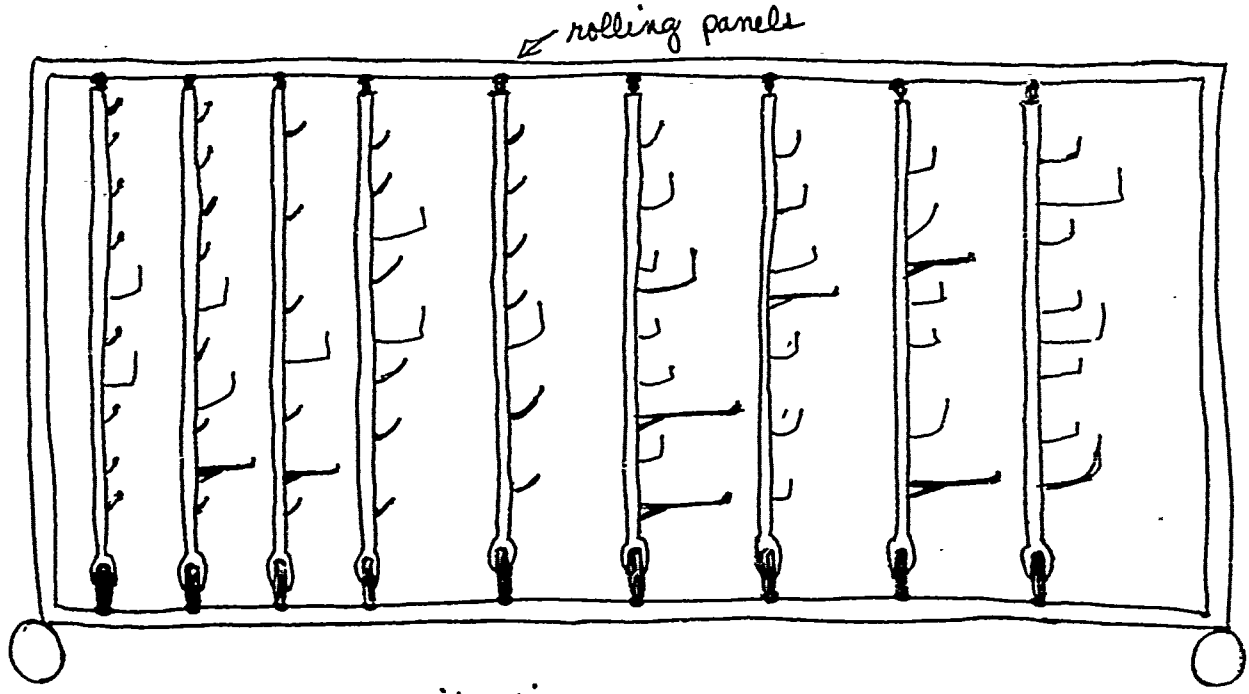
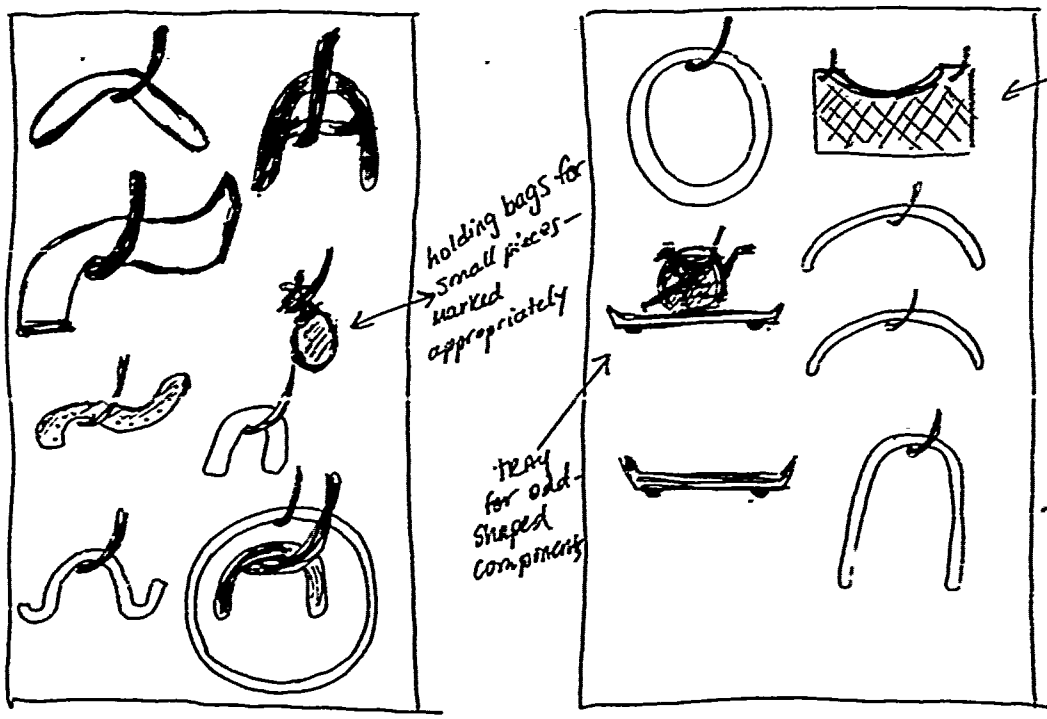
F.CC SUBJECT



side view



front view of ~~sliding~~ rolling panels

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050069

ENGINEERING NOTES

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RCC SUBJECT T.O. 16

Ordering procedures vary alittle, but for the most part, when stock gets low (minimum on-hand count alerts the main store) the "system" automatically puts in an order through procurement.

Northwest Airlines has the SEPTRE II system which kicks out an order (via modem at the field level) through central stores to procurement. Info on inventory can also be accessed by Plans, Scheduling, Production, Budget & Systems Operations if questions occur on a long-lead time item.

Continental Airlines actually overrides the computer on certain components if high-breakdown statistics show up. If it looks like a trend, the # in the computer can be altered after a certain period of time. Management is also empowered to bypass Procurement in an emergency. Central Stores has vendor listings and parts can be ordered directly to save time, if necessary.

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050010

ENGINEERING NOTES

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RCC SUBJECT T.O. 16 Major Topics)

Training:

Most of training done for the shop workers is in the form of O.J.T. It is well-documented due to FAA regulations.

United Airlines is in the process of changing their procedures for O.J.T. from "actual-flow" tasking to "forced-flow" tasking. This means that instead of taking a new worker through the checklist as tasks come up over the first few months, they follow the checklist closely by finding the tasks to complete throughout the shop. It costs a little more up front to train someone that way; but in the long run, the new worker will be able to work without a "guardian" much faster. This frees up qualified trainers and also puts 1, instead of 2 people, on a given job much sooner.

Northwest Airlines used multi-media training, to include some video, some computer and some one-on-one O.J.T. Their shop workers generally take about 3 months to be signed off on everything. The computer training is for their computerized mx tracking. The unique thing is that they actually have a program designed to train the shop workers. Most airlines don't consider this to be part of necessary training for their mechanics. NWA, on the other hand, assume that if one is not trained, input will be erroneous & also the records, reports, etc.

American airlines does a lot more cross-training than most other airlines. They refer to them as "rotatable", in that they are trained to work in 2 or 3 engine areas, and can be rotated to wherever they are needed. Although all airlines have to document a well-rounded training program by shop, most shops keep people "current" on only one area at a time. This more progressive method of cross-training allows flexibility in scheduling of workers for the Production Manager.

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RCC SUBJECT T.O. 16

Management and/or supervisory training is more vague than the required training of shop people. Generally, there are manuals to explain procedures and new managers are "shown around, then handed manuals" according to an American Airlines employee who wished to remain anonymous! Actually, most management-types reported similar experiences.

On the flip side, Northwest Airlines has some rather innovative management training programs that have proved very successful. The Training Manger for MX Programs created a Part 121 workshop on MX & Engineering geared towards upper-level mngmt. The workshop covers: walk through of Pt 121 as it relates to MX; explains how FAA interprets 121; mx programs in general; mx manuals; equipment; data collection for design changes; and reliability.

Northwest Airlines is also working on a similar void-filling workshop in areas of budgeting, finance, accounting and management techniques for shop foreman and other lower-level Supervisors/managers.

Planning/Scheduling:

As far as documentation for work cards (procedures and requirements/specs) is concerned, the airlines must be in compliance with their approved maintenance procedures. It is, therefore, imperative that methods work and keep the process flowing smoothly. When a method ceases to be cost-effective or efficient, a team is set up to rewrite the documentation and get it approved by the FAA.

At Delta, jobs are sent to Production Control (they are retrieved by computer up at Equipment Control) by job card listings. Production Control manually pulls all work cards, orders necessary parts & kits and sends to floor.

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RCC SUBJECT T.O. 16

although United's system is computerized, there is still some manual work to job cards. Once an engine is off wing, the computer generates a complete overhaul list or (at least) a list of the particular inspections for the module written up.

The production team (includes engineers), foreman, etc) looks over the history of the engine, takes the notes from the ~~previous~~ initial inspection and decides what tasks need to be done. This is input into their computer which assigns job numbers to each task & spits out a sheet listing the #s. Then the remaining jobs are manually pulled from the work cards and discarded, leaving only what needs to be done. This are given to the floor for working.

At Continental airlines, Planning and Records work together to do all maintenance scheduling long term. Then MAT control, maintenance hangar supervisors and stores (parts/inventory) sit in on Monday morning planning sessions to work out the weekly schedule and review in-process work.

Scheduling of engines in and out of the shop is monitored by Planning. Most airlines actually send an "inspector" from the Planning dept down to the floor to make sure all parts are flowing through in a timely manner. "awaiting parts" is the only reason a component is allowed to have for not moving through.

The computization and use of bar coding helps to track parts, modules, etc easily. Any unit that hasn't shown progress is physically tracked down with the aide of the computer. Delta is not using bar coding yet, but plans are in the works to implement this soon. They are, however, using serial #s entered in the computer to monitor work flow.

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ENGINEERING NOTES

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RCC _____ SUBJECT T.O. 16 Major Topics

Planning & Scheduling (cont)...

Engineering support is an essential part of Plans, Scheduling and Records. Records plays an important role in providing historical data for decision-making purposes. Engineers are often attached to Records in the chain of command.

Engineering will usually lead the team in rewrites of documentation, and are called upon often to help solve problems that are out of the ordinary.

Continental Airlines uses a true version of Reliability Centered Maintenance, in that they are reviewing workflow, repeat write-ups on serial#s and regulations/procedures on a regular basis. They've been forced, because of in-house budget cuts, to be as frugal as possible ... which translates to efficient and cost effective.

Many airlines review maintenance practices in order to cut costs long term. Another major reason cited is to be able to provide more engines to the field that will remain operational.

Northwest airlines found that engines remained in service longer when they initiated their current policy of reviewing engines brought in for unscheduled mx. If the engines met one of the following requirements, it went in for "EHM" (Eng Heavy Mx):

- life limits are getting close in several/all modules,
- boroscope insp. shows extensive damage, or
- has just been a long time since last EHM.

They did find that costs raise somewhat due to more parts changed out, plus some increased labor; however, it was not significant enough to deter management. NWA does not keep a very large inventory of spare engines, so it pays to keep the engines working out in the field.

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ENGINEERING NOTES

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United Airlines also has a new program that has allowed for smoother workflow and added to reliability of the engine fleet. It's called a Steady State program, which reviews engines within 200 cycles of hard time inspections. When workflow slows due to fewer unscheduled jobs and/or scheduled mx, Production Control and Planning can pull in an engine due a certain hard time insp in the near future. This can work even if a certain module repair shop is the only place without work since it's conceivable to find an engine needing work in that area only. United says it saves money, keeps the Union happy and controls workflow.

I found no airline with a real training program for new Planners, Schedulers or Record personnel. The closest to a program was United - they issue engine charts to new Planners, have a structured computer-training program and assign a "mentor" for the first month.

American Airlines essentially provides new personnel in these areas with all documentation available on current jobs in process, plus copies and explanations of all forms used for the job. Computer initiation is giving, as well, since this is a major part of doing the job in all areas of Planning & Scheduling.

Process:

Overhaul vs. OCM vs. Return to Specs is a big question, as well as an area for arguement in the industry. It depends largely on the main goal of the airline. This same subject was touched on during my discussion of engineering support & review of procedures for rewrite. Some airlines want to save money in the mx area

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ENGINEERING NOTES

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RCC SUBJECT T.O. 16

and some have the goal of keeping engines out of the shop for as long as possible. Still others simply want to get engines through the shop at breakneck speed.

"Overhaul", or actual Ø timing, if done right puts the engine back out in the field for the longest period of time. "On-condition MX" (OCM) puts the engine back in service more quickly, but one usually sees the same serial #s coming through as few as 300 hrs later. "Return to spec" saves money over complete overhaul because many parts are re-used during build up without any rework at all, but the engine will usually be back in about ½ the time a completely overhauled engine will be returned for MX.

The complaint of "high infant mortality" is seen more from airlines that don't try to keep modules together during reassembly. Specifically, core buildup is critical. Certain engine components have been together since "birth" and reuniting them is best for the engine.

United airlines "match-grinds" their rotors to stators so that they must always remain together. It slows production down a little, but in the long run, engines run more efficiently. Certainly, awaiting modules creates the necessity for more efficient planning, but the system has been working smoothly. Planning is able to control this somewhat by telling Production what modules need to be torn down and in what order.

Delta gives each engine a tracking # and a bill of materials and they track the modules, parts and components through the overhaul cycle.

United does both Overhaul & Return to Specs, depending on the age and the requirement in the field for engines. OCM is only done when it is one or two modules needing

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ENGINEERING NOTES

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RCC SUBJECT T.O.16

unscheduled work on an engine that has recently had a teardown completed.

American airlines does a "return to specs" on a module basis. They stopped doing complete overhauls when they needed to get engines back out faster and save money on parts. Reported that it doesn't speed things up that much and there is serious doubt as to how much money is saved in the long run if engines come back sooner. There is some study of this question currently going on.

Northwest, as I mentioned, brings in engines for unscheduled maintenance and often pulls it for an overhaul. They also bring in engines on hard-time and overhaul. They believe in overhaul because a O-timed engine reduces the amount of removals for unscheduled reasons. They are dealing w/ the problem of high infant mortality rates, but believe there are ways to reduce those statistics. One suggestion they are trying is to run an engine on the test cell beyond normal requirements to try to catch more problems before they are released. "If standards are too low, raise them."

As I mentioned in the Plans & Scheduling section, tech data is highly regulated, and everyone must be following FAA-approved procedures. Design specifications are set by the manufacturer and airlines heed the advice of tech reps whenever possible. Engineers work closely w/ the tech reps and the shop personnel to solve problems and get current, workable procedures in everyone's hands.

QA is also an FAA requirement. QA must also fall outside of the MX chain of command.

United Airlines has the most inspectors on payroll - about 22 for every 100 mechanics. The industry average is about 8 or 9 and the next leading competitor is 12.

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ENGINEERING NOTES

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United sites their early days of hiring many uncertified mechanics as the reason for this large # of inspectors. It is also why they are one of the leaders in training programs. But, said a shop foreman, "why drop your standards after you raise the percentage of A&Ps? We like being a leader in quality."

Lastly, in looking at Employee Suggestion Programs, I noted that most airlines have extremely well-publicized programs. Some have fancy names, like American Airlines, who use their trademark "AA" in everything. They have an IDEAAS program and prizes include cash awards, quarterly placques and the annual presentation of a brand new tool box to the IDEAA of the year from the shop floor.

United pays high cash awards and recognizes their contributors quarterly.

Delta also has a department of engineers who work through the huge number of suggestions that come across the desks of supervisors from the shop floor. Delta, being non-union, has already laid the ground for flexibility and innovation, and the employees respond to their suggestion program regularly.

* American Airlines also has a department of 20+ people to process and research new ideas. A few years ago, a Bearing Refurbishment shop was opened up. One man has the job to inspect all discarded bearings, and so far the savings have been hundreds of thousands of dollar - since the reusable percentage rate is in the 90's!

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050018

ENGINEERING NOTES

EMPLOYEE GARDNER DATE 11 July 90 PAGE NO. 1

RCC MATPFA SUBJECT UFC MM Engineering Problems

Interview Mr John Register - MMF process engineer supporting the UFC repair process. He is currently the only engineer from MM assigned to support the UFC area, and one of only 20 assigned to support the entire F-100 engine world wide. He says he can only give 1-2 afternoons each week to the UFC area. A great deal of his time is consumed supporting various other efforts such as supplier/contract review and administration. The problem appears to be a difficulty in recruiting and retaining engineers. This situation is common throughout govt and commercial industry.

Mr Register identified several areas that he considered significant problems in the UFC repair process:

- No formal data is available on flowtimes through the process, or paths taken. Because the UFC OCM process is so complex and variable, a lack of such data makes it extremely difficult for him (or any other engineer) to detect specific problems, or perform trend analysis.

- The Tech orders (TOs) used in the UFC repair process were written to support overhaul and are very difficult to use in an OCM environment. They do not contain many of the specifications the craftsmen need to make OCM decisions (these process decisions would not occur in overhaul) This to deficency forces the UFC area to rely on craftsmen's experience & judgement. This reliance makes the process extremely sensitive to craftsman turnover. It also adversely effects the feasibility of locating subcontract repair services.

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050019

ENGINEERING NOTES

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RCC MATPFA SUBJECT UFC mm engineering problems

- Lack tolerance specs for wear/abrasion on many UFC piece parts. This causes an extremely high replacement rate for many parts - driving up costs and straining the supply system. Spares are extremely critical to the UFC OCM process as Bendix is sole source on most parts (design data is proprietary) and requires a 2 year lead time on most orders. The area MIC attempts to perform mat'l review on exchange items, to return serviceable items to service, but nothing is done for non-exchange parts.

~~John Register~~

When I recommended the formation of a Mat'l Review Board (MRB) to evaluate replaced non-exchange parts, John Register explained that mm planned to create one by Oct 90. He didn't know the details of how the board(s) would be constituted, but did expect them to address non-exchange parts. I think this will help them quite a bit. Susan Schuttle (MAWFT), who was also present, agreed to find a contact on the MRB development effort. I would like to find out how the A.F. plans to develop their MRB(s).

I discussed the possibility of improving the TOs to include both OCM data and part condemnation specs. John explained that a TO change is requested by the shop on an AFLC form 103 and put into work by mm on an AFLC 252. The procedure is generally so complex that it is seldom used properly. The most common procedure

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ENGINEERING NOTES

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RCC MATPPA SUBJECT UFC mm engineering Problems

is for mm to approve a requested change by annotating the AFLC 103 (which is good for 120 days). If the shop does not insist on an AFLC 252 (good indefinitely - until cancelled or the TO is updated) the whole thing is usually forgotten.

I asked John about developing a local "process spec" which would reference the TO, but provide specific mm guidance on OCM. He felt that it would be a good idea (Bendix uses their own process specs instead of the TO when they repair a UFC) and should be considered. He agreed that data generated by the MRB supporting the UFCs could be incorporated into the spec + used by the craftsmen to perform piece-part condemnation/replacement. This would act to reduce [redacted] parts consumption and release the demand for MRB/Engineering support. Neither John nor I could estimate the cost/duration involved in producing this spec. John indicated that, given approvals by mm, MAT, and QA, the document could be used legally on SA-ALC without changing the TO. He also pointed out that TO updates were over 2 years behind and cost approximately $500/page to implement. Why update something that you don't/can't use well anyway? I will follow up on this as a possible improvement recommendation.

Other points John made:

- He [redacted] is not heavily involved in facilities/equipment purchase decisions. MAT does this on their own.

- He was worried that a tight specification on a part would require the craftsmen to measure each part + impede the parts flow.

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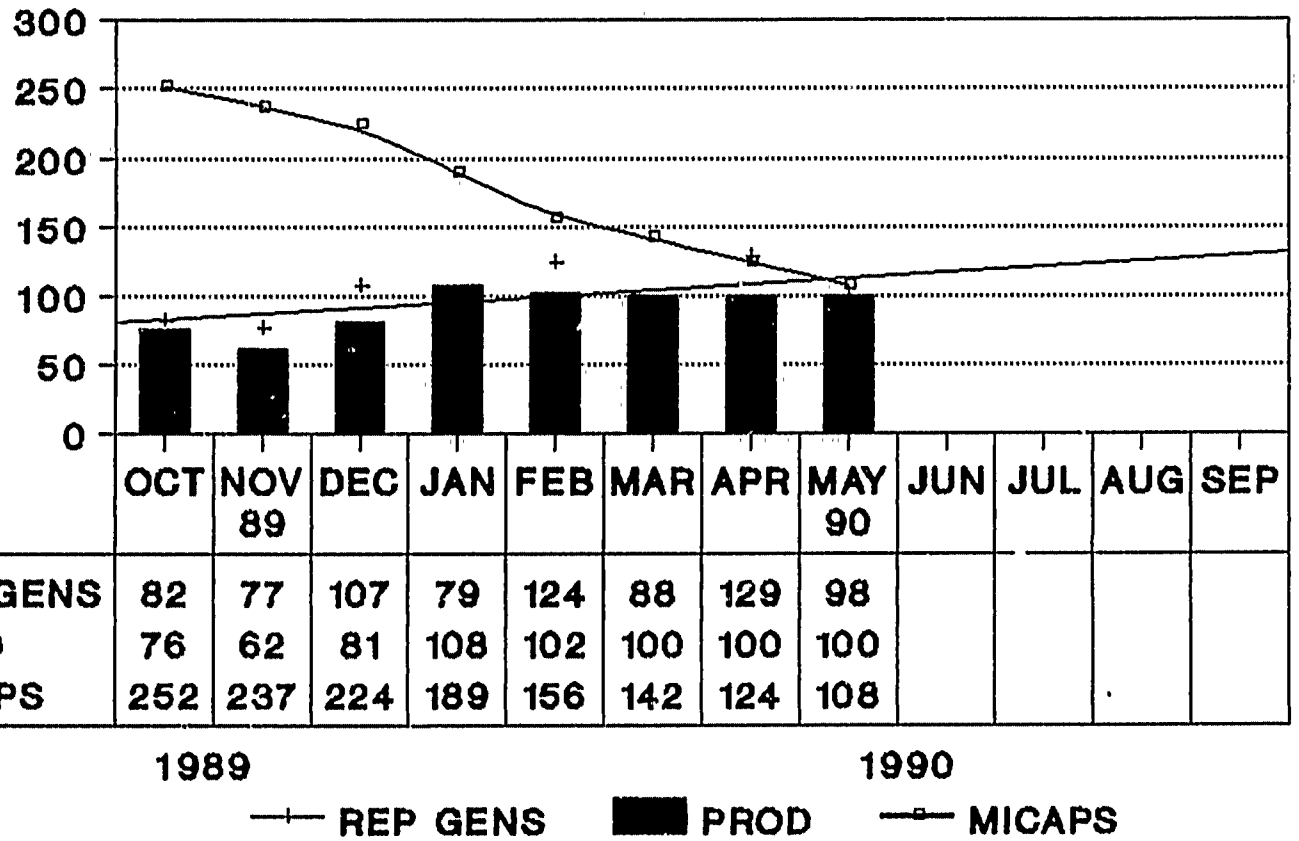
050021

6.0

WORKLOAD

F15/F16 UNIFIED FUEL CONTROL REP GENS VS PRODUCTION OCT 89-MAY 90(SA-ALC)



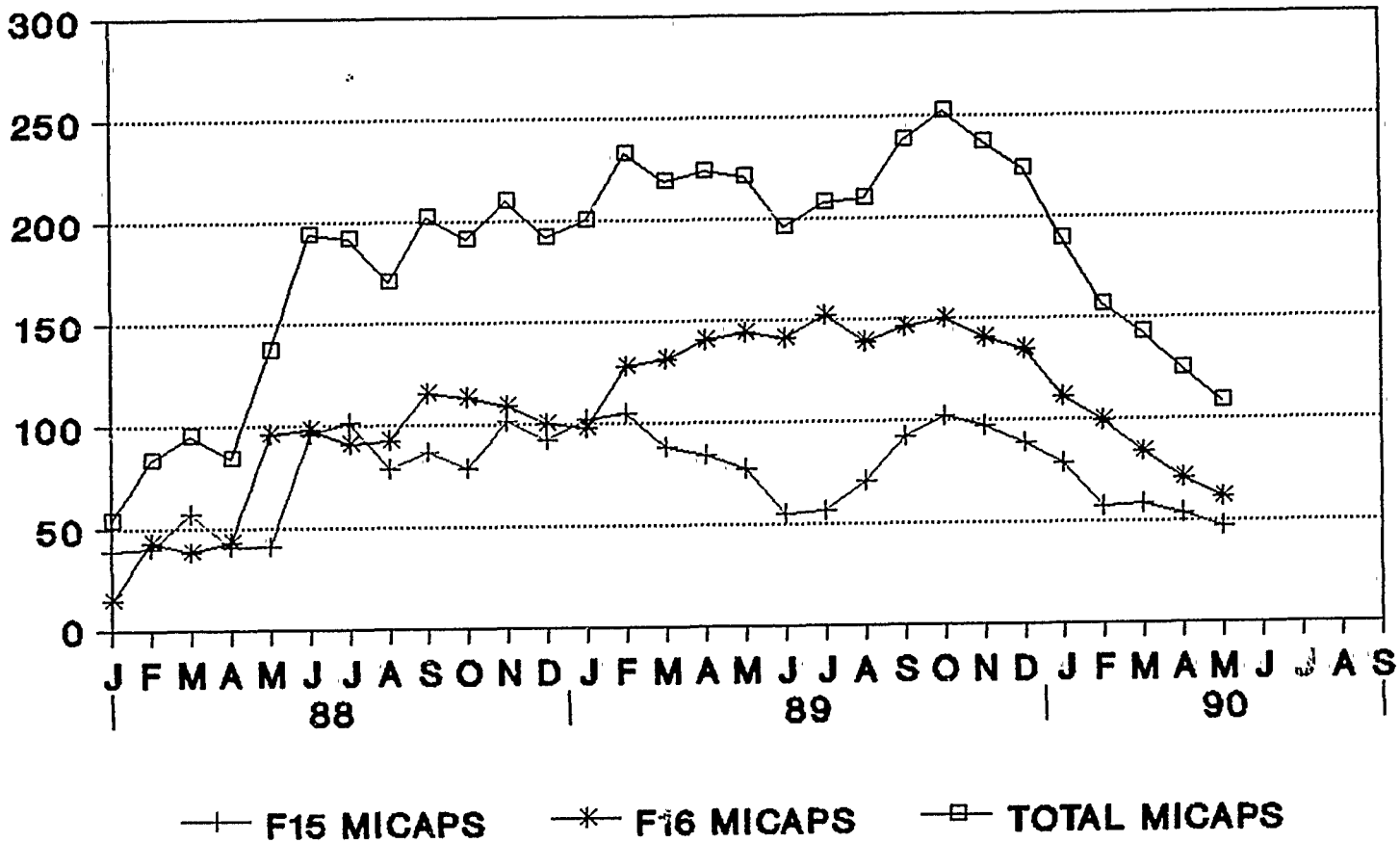
	OCT	NOV 89	DEC	JAN	FEB	MAR	APR	MAY 90	JUN	JUL	AUG	SEP
REP GENS	82	77	107	79	124	88	129	98				
PROD	76	62	81	108	102	100	100	100				
MICAPS	252	237	224	189	156	142	124	108				

GENS MO AVE= 98, QTRLY AVE= 293.6
PROD MO AVE= 91.1, QTRLY AVE=273.3

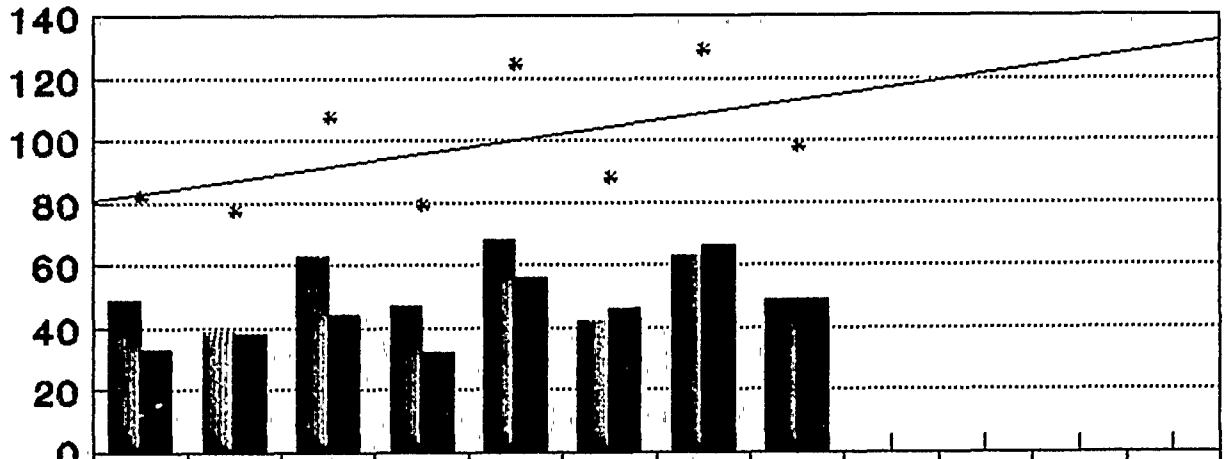
T00030

Rxed fm Ron Headcamp (Cmn)
10 July 1990.

UNIFIED FUEL CONTROL MICAPS
JAN 1988-SEP 1990



UNIFIED FUEL CONTROL REP GENS
OCT 89-MAY 90



	OCT	NOV 89	DEC	JAN	FEB	MAR	APR	MAY 90	JUN	JUL	AUG	SEP
F15 GENS	49	39	63	47	68	42	63	49				
F16 GENS	33	38	44	32	56	46	66	49				
TOTAL GENS	82	77	107	79	124	88	129	98				

MO AVE- 98, QTRLY AVE- 293.6

3 AUG 1990

FROM: MATPF

SUBJECT: Average Flow Time

TO: Greg Gardner

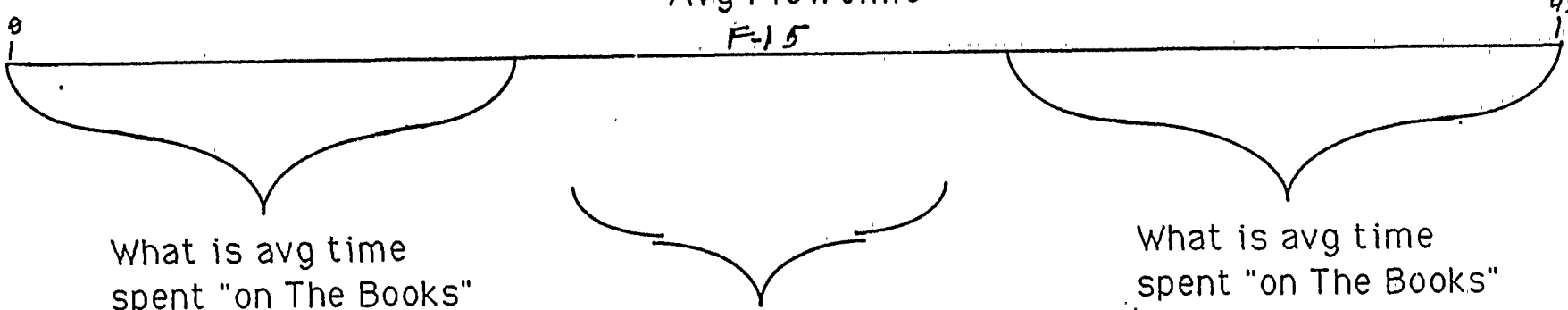
Attached is the information requested.

ADAN SOSA, JR
Chief, Fuel Control Section
Technology Repair Division

2 Atch
1. F15
2. F16

Eduardo Gonzalez

45 Days
Avg Flowtime
F-15



What is avg time spent "on The Books" charged to MATPFA when the UFC is not actually In Work?

5 days/hours

5-10 % % UFCs generally affected

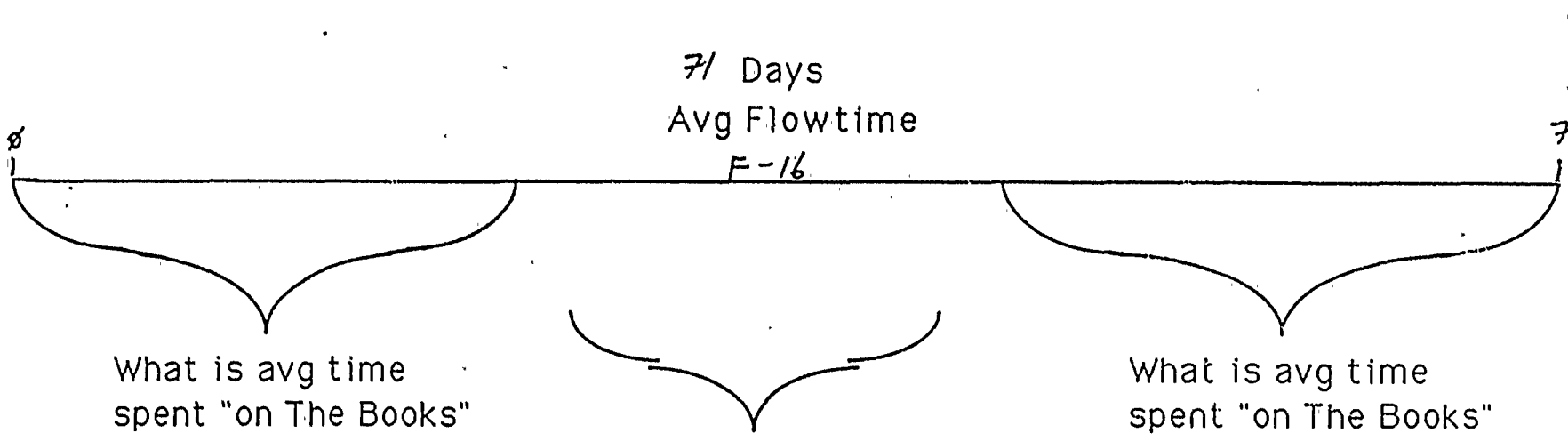
S.I.T CONTROLS AWP N/V

Any Time while the UFC is in work that should not be counted towards production? Please Describe.

What is avg time spent "on The Books" charged to MATPFA while the UFC has been completed but has not been dropped from the MATPFA account?

_____ days/hours

_____ % UFCs generally affected



What is avg time spent "on The Books" charged to MATPFA when the UFC is not actually In Work?

Any Time while the UFC is in work that should not be counted towards production? Please Describe.

What is avg time spent "on The Books" charged to MATPFA while the UFC has been completed but has not been dropped from the MATPFA account?

21 days days/hours

10-15 % % UFCs generally affected

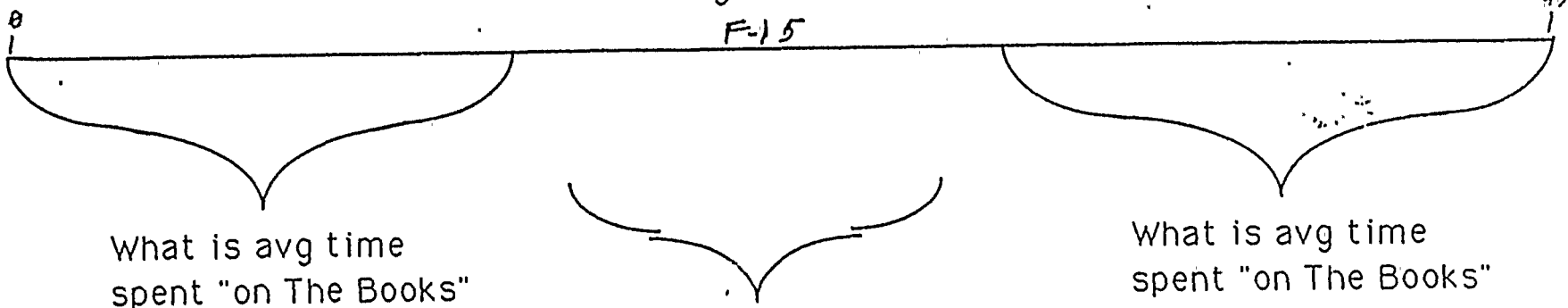
TCTO-538
TCTO-543

_____ days/hours

_____ % UFCs generally affected

Braswell

45 Days
Avg Flowtime
F-15



What is avg time spent "on The Books" charged to MATPFA when the UFC is not actually In Work?

_____ days/hours

_____ % UFCs generally affected

Any Time while the UFC is in work that should not be counted towards production? Please Describe.

When control is mounted on a test stand that is inoperative/ waiting On-Site repair.

When control is waiting to go into/or when control is placed in AWP Status.

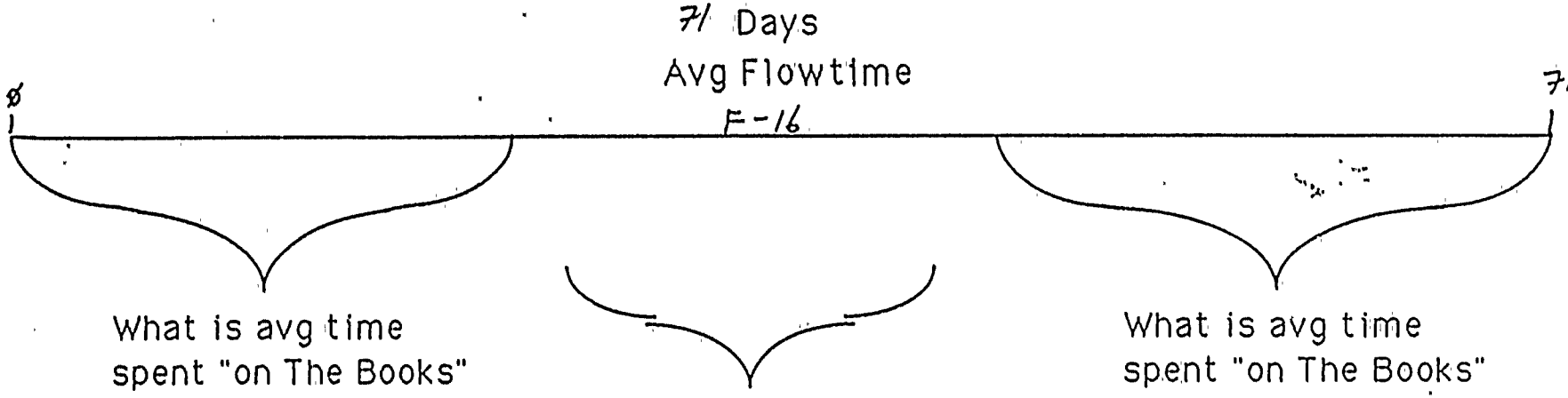
While waiting on instructions/ recommendations from MM.

While waiting measurement/kits from contractor (Bendix)

What is avg time spent "on The Books" charged to MATPFA while the UFC has been completed but has not been dropped from the MATPFA account?

_____ days/hours

_____ % UFCs generally affected



What is avg time spent "on The Books" charged to MATPFA when the UFC is not actually In Work?

_____ days/hours

_____ % UFCs generally affected

Any Time while the UFC is in work that should not be counted towards production? Please Describe.

When control is mounted on a test stand that is inoperative/waiting on On-Site repair.

When control is waiting to go into/or when control is placed in AWP Status.

While waiting on measurement/ kits from contractor (Bendix)

What is avg time spent "on The Books" charged to MATPFA while the UFC has been completed but has not been dropped from the MATPFA account?

_____ days/hours

_____ % UFCs generally affected

ENGINEERING NOTES

EMPLOYEE Parker DATE 7/2/90 PAGE NO. 3

RCC MATPFA SUBJECT Flow times

7/2/90 - Monday

I picked up the fourth quarter '89 data from scheduling this AM. I was also able to obtain the standard hours for both the F-15 & F-16 aircraft. These were 59 and 57 days respectively (or 356 standard hours, which I assume are labor hours used for tracking purposes). Since there have been recent changes in the UFC production processes, I chose to use data collected from Oct. 89 to Jan. 90 to compute the expected hours, which is 116 days for the F-15 and 109 days for the F-16. I was somewhat surprised by these numbers, as I would have expected the F-16 to have longer flow days, as the shop is now required to perform a demate on all UFCs for this aircraft. The F-15 on the other hand, is only demated as needed.

MDB Section 6.0

JULY PRODUCTION SUMMARY

UFC PRODUCTION TOTAL= 122

F-16 SUMMARY	F-15 SUMMARY
TCTO 543= 39	TCTO 543= 0
TOTAL DEMATES= 41 OR 71%	TOTAL DEMATES= 27 OR 45%
TOTAL MINOR REPAIRS= 17 OR 29%	MINOR REPAIRS= 35 OR 55%

UFC TOTAL REPAIR CLASS BREAKDOWN IS:

MAJOR REPAIRS 70 OR 57%

MINOR REPAIRS 52 OR 43%

JUST SAY "NO" TO "CHERRY PICKIN"!!!!!!

6.1

LOG BOOK DATA

AREA D SORT

DATE	TEST STAND	S/N	8:30	10:30	12:30	14:00	16:30	18:30	20:30	22:00	0:30	2:30	4:30	6:00
1-May	50002/17	30662	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	T/S PFCD	M&I	M&I	M&I
2-May	50002/17	30662	M&I	M&I	M&I	M&I	M&I	SAT	SAT	T/S	SAT STARTED OVER		M&I	M&I
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3-May	50002/17	30419				30419 M&I C/ON	NO OPR	NO OPR	NO OPR	C/ON	M&I	M&I	M/V LEAKS	REPLAC
4-May	50002/17	30419	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	TROUBLESHOO	LEAKING	DEMATING	C/OFF TO
5-May	50002/17	30419	WAITING FOR	TO MATE	HEAD SENSOR	READY FOR MA	NO OPR	NO OPR	NO OPR	MATING	MATING	MOVING CONTROL	MATING	OPR
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	M&I C/ON	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7-May	50002/17	30153					30153	DOGBONES	M&I	M&I	M&I	M&I	M&I	M&I
8-May	50002/17	30153	M&I	M&I	DEMATE	SPOT CK	NO OPR	NO OPR	NO OPR	ASI SP CK	ASI NO OPR	ASI	ASI	ASI
9-May	50002/17	30153	ASI C/OFF	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	ASI C/OFF	AUG C/OFF	SOLD		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10-May	50002/17	52286								ASI 52286 C/ON	ASI C/ON NO	NO OPR	NO OPR	NO OPR
11-May	50002/17	OPEN		>		>		>		>	52286 ASI C/ON		NO OPR	NO OPR
12-May	50002/17	52286	ASI C/ON	ASI NO OPR	PLUMB SAT	SAT	TROUBLESHOOTING SAT		C/OFF					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	C/ON	RAR	RAR	SHUTDOWN 0230
14-May	50002/17	32309	SA RAR	OPR 066	AWAITING WRITE UP		M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
15-May	50002/17	32309	M&I	M&I	M&I	M&I	M&I	M&I	SAT	SAT	SAT	SAT	SAT	GK 50
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	C/ON	C/ON SPT CK	[illegible]
16-May	50002/17	31091		31091	SA RAR PLUM	SA RAR PLUMB	NO OPR	>	>	FLUSH & PLUMB	RAR C/OFF	RAR	RAR	RAR C/O
17-May	50002/17	31091	SA RAR	SA RAR	SA RAR	SA RAR	NO OPR	NO OPR	NO OPR	RAR	RAR	RAR	RAR	RAR
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18-May	50002/17	31091	DOGBONES	OPR 066	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19-May	50002/17	31091	M&I TO/W CK	M&I	M&I	M&I	SAT	SAT	SAT	SAT	SAT MATRIX	SAT	SHUTDOWN 0230	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
21-May	50002/17	52188									52188	ASI NO OPR	ASI NO OPR	ASI NO C
22-May	50002/17	52188	ASI C/ON	ASI NO OPR	NO OPR	ASI NO OPR	ASI FLUSH	ASI FLUSH	ASI FLUSH	ASI FLUSH	ASI C/ON	ASI C/ON	ASI C/ON	ASI C/ON
23-May	50002/17	52188	M&I	M&I	M&I	M&I	M&I	M&I NO OPR	M&I NO OPR	M&I	M&I	M&I	M&I	M&I
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25-May	50002/17	30966				30966 C/ON	M&I C/ON	M&I	M&I	M&I	PLUMBING	M&I	M&I	M&I
26-May	50002/17	30966	M&I	M&I	M&I	M&I	M&I NO OPR	NO OPR	M&I NO OPR	M&I	M&I NO OPR	M&I NO OPR	T/S TO WN	M&I
27-May	50002/17	30966	M&I	M&I	M&I	M&I	M&I	M&I	PLA COMP	SAT	SAT	SHUTDOWN 0230		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29-May	50002/17	51238	ASI C/ON	NO OPR	NO OPR	ASI NO OPR	ASI C/ON	ASI C/ON	ASI C/ON	ASI C/ON	ASI	ASI	ASI	ASI
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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2-May	50002/18	52208	SAT	SAT	SAT REJEC	SQD REMOVED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30419 ASI C/ON	NO OPR	NO OPR	REMOVE T/R	AWAITING CONT	TO MATE	AST IN Q/A T/S	REPEACE PEA CONNEC
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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5-May	50002/18	51001	M&I	M&I	M&I	M&I	SAT	SAT	SAT	REJECTED	SAT	SAT	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30419 M&I C/ON	
6-May	50002/18	30419	NO OPR	NO OPR	NO OPR	RAR C/ON	M&I	M&I	M&I	M&I	NO OPR	M&I	LEAKAGE	NO OPR
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8-May	50002/18	52274	REMOVED 30419		OPEN	SA RAR FLUSH	NO OPR	NO OPR	NO OPR	RAR	ASI NO OPR	ASI	ASI	ASI
9-May	50002/18	52274	SA RAR	SA RAR	SA RAR	C/OFF	NO OPR	NO OPR	NO OPR	RAR C/OFF	RAR C/OFF	RAR	RAR	RAR
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10-May	50002/18	31780		31780 RAR C/ON		RAR	RAR	NO OPR	COMPLETED	TZ0012	RAR TZ0012	NO OPR	NO OPR	NO OPR
11-May	50002/18	31780	TZ0012	NO OPR RAR	TZ0012	TZ0012	NO OPR	NO OPR	TZ0012		RAR TZ0012	NO OPR	NO OPR	NO OPR
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13-May	50002/18	31500			ASI 31500 C/ON		NO OPR	NO OPR	NO OPR	NO OPR	ASI SOLD	ASI	MATING M&I	M&I
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15-May	50002/18	31500	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	REJECT NO OPR	[illegible]
16-May	50002/18	30380	ASI C/ON	ASI C/ON	ASI C/ON	ASI C/ON	NO OPR	>	>	ASI C/ON	ASI	ASI	ASI	ASI
17-May	50002/18	30380	ASI	SPT CK	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	ASI	ASI	ASI	ASI	ASI
18-May	50002/18	30380	ASI SPT CK	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	ASI SPT CK	ASI NO OPR	ASI	ASI	ASI
19-May	50002/18	30380	ASI	NO OPR	NO OPR	ASI	ASI NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	SHUTDOWN 0230	
21-May	50002/18	30380	ASI	ASI	ASI	ASI	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI GG SOLD	ASI	ASI	ASI	ASI
22-May	50002/18	30380	ASI	SOLD SAFETY WIRE		MATING	NO OPR CON TO MATE		MATING COMPLETED		M&I	M&I	M&I	M&I
23-May	50002/18	30380	M&I	M&I	M&I	M&I	SAT	SAT	SAT	SAT	SAT T/S DOW	SAT	SAT	SAT SOL
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25-May	50002/18	31006	RAR C/ON	NO OPR	NO OPR	RAR C/ON	RAR C/ON	RAR C/ON	RAR C/ON	RAR C/ON	RAR C/ON	RAR C/ON	RAR C/ON	RAR C/O
26-May	50002/18	31006	RAR	RAR	NEED REV ON	OPR 066	RAR NO OPR	NO OPR	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR NO
27-May	50002/18	31006	RAR NO OPR	NO OPR	NO OPR	RAR NO OPR	RAR 066	RAR 066	RAR 066	M&I	M&I	M&I	SHUTDOWN 0230	

[redacted]		[redacted]		M&I		M&I		M&I		M&I EA © SOR		SAT		SAT		SOLD SAT							
29-May	50002/18	31078																				RAR C/O	
30-May	50002/18	31078	RAR NO OPR		NO OPR		RAR		RAR		RAR	M&I		M&I		M&I		M&I		M&I		SAT	
31-May	50002/18	31078	SAT		SAT		SAT		SOLD C/OFF		SAT REMOVED	CONTROL C/ON		CONTROL C/ON		RAR		RAR		RAR		RAR	
[redacted]		[redacted]																					
1-May	50002/18	31071							31071 RAR C/O		NO OPR	NO OPR		NO OPR		RAR		RAR NO OPR		RAR		RAR	
[redacted]		[redacted]																					
4-May	50002/18	52086	RAR NO OPR		NO OPR		NO OPR		NO OPR		NO OPR												
5-May	50002/18	52086	RAR NO OPR		RAR		RAR		RAR		RAR	NO OPR		NO OPR		NO OPR		RAR C/OFF		NO OPR		NO OPR	
6-May	50002/18	52086	RAR NO OPR		NO OPR		NO OPR		NO OPR		RAR C/ON	RAR		RAR		RAR		RAR		RAR		RAR	
[redacted]		[redacted]																					
[redacted]		[redacted]																					
[redacted]		[redacted]																					
10-May	50002/18	31715	M&I		M&I		M&I		M&I		T/S DOWN	T/S DOWN		T/S DOWN		T/S DOWN		T/S DOWN		T/S DOWN		T/S DOW	
11-May	50002/18	31715	M&I		M&I		M&I		M&I		M&I	M&I		SAT				SAT		SAT		SAT	
[redacted]		[redacted]																					
12-May	50002/18	32581									32581 SAT C/OFF			RAR C/ON		RAR		RAR NO OPR		RAR		SHUT DOWN 0230	
14-May	50002/18	32581	SA RAR		SA RAR		SA RAR		TZ0012		NO OPR	NO OPR		NO OPR		TZ0012		RAR TZ0012		RAR		RAR	
[redacted]		[redacted]																					
15-May	50002/18	51813									51813			NO OPR		RAR		RAR NO OPR		RAR		RAR	
16-May	50002/18	51813	SA RAR		SA RAR		SA RAR		SA RAR		NO OPR			NO OPR		RAR		RAR		RAR		RAR	
17-May	30002/18	51813	SA RAR		SA RAR		SA RAR		SA RAR		NO OPR			NO OPR		RAR		RAR		RAR		RAR	
[redacted]		[redacted]																					
18-May	50002/18	30535									30535 PLUMB			NO OPR		NO OPR		NO OPR		RAR C/ON		RAR NO OPR	
19-May	50002/18	30535	RAR		RAR NO OPR		NO OPR		RAR NO OPR		RAR NO OPR			NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR	
21-May	50002/18	30535	RAR		RAR		RAR		RAR		RAR NO OPR			RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR	
22-May	50002/18	30535	DOG BONES		M&I		M&I		M&I		M&I			M&I		M&I		M&I		M&I		M&I	
[redacted]		[redacted]																					
24-May	50002/18	30252	RAR		NO MEETING		C/ON		RAR PLUMB		RAR NO OPR			RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR		R...	
25-May	50002/18	30252	RAR		RAR		AW WRITE UP		REJECT C/OFF														
[redacted]		[redacted]																					
28-May	50002/18	31355			31355 RAR C/ON				PLUMBING		RAR FLUSH & PLUMB			RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR	
27-May	50002/18	31355	RAR NO OPR		NO OPR		NO OPR		RAR NO OPR		RAR NO OPR			RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR		SHUT DOWN 0230	
29-May	50002/18	31355	RAR		RAR		RAR		NEED REVIEW		M&I			M&I		M&I		M&I		M&I		M&I	
[redacted]		[redacted]																					
30-May	50002/18	30130							30130 C/ON		RAR NO OPR			RAR NO OPR		RAR NO OPR		RAR C/ON		RAR		RAR	
31-May	50002/18	30130	OPR NEEDS R		RAR RE EC C/OFF																		
[redacted]		[redacted]							30201 C/ON		PLUMBING			RAR TO REMO									
[redacted]		[redacted]																					
1-May	50002/20	30703	TZ0012		TZ0012		TZ0012		TZ0012		NO OPR			NO OPR		TZ0012		RAR OPR 066		RAR		RAR	
2-May	50002/20	30703	M&I		M&I		M&I		M&I		M&I			M&I		SAT		SAT		SAT		SAT	
[redacted]		[redacted]																					
3-May	50002/20	51271									51271			NO OPR		RAR PLUMB		RAR NO OPR		RAR		RAR	
4-May	50002/20	51271	PLUMB		SA RAR		SA RAR		RAR		NO OPR			NO OPR		NO OPR		RAR NO OPR		RAR		RAR	
5-May	50002/20	51271	RAR NO OPR		RAR		RAR		RAR		RAR C/OFF			NO OPR		NO OPR		RAR NO OPR		C/OFF		NO OPR	
6-May	50002/20	51271	RAR NO OPR		NO OPR		NO OPR		RAR NO OPR		NO OPR			NO OPR		RAR C/OFF		RAR C/OFF		RAR		RAR	
[redacted]		[redacted]																					
7-May	50002/20	32205																32205		C/ON SAT SPR		SOLD	
[redacted]		[redacted]																					
8-May	50002/20	51007																51007 RAR C/ON					
9-May	50002/20	51007	SA RAR		SA RAR		TZ0012		TZ0012		NO OPR			NO OPR		NO OPR		TZ0012		TZ0012 RAR		RAR	
[redacted]		[redacted]																					
10-May	50002/20	30843			30843 FLUSH		RAR C/ON		RAR					NO OPR		NO OPR		NO OPR		RAR		RAR	
11-May	50002/20	30843	RCVY SLEW		>		RAR OP 066		OP 066		NO OPR			NO OPR		OP 066				RAR OP 066		RAR	
[redacted]		[redacted]																					
14-May	50002/20	31680	SA RAR		SA RAR		SA RAR		OPR 066		M&I			M&I		M&I		M&I		M&I		M&I	
[redacted]		[redacted]																					
15-May	50002/20	31072																				31072 RAR C/ON	
16-May	50002/20	31072	SA RAR		SA RAR		SA RAR		SA RAR		NO OPR			NO OPR		NO OPR		TZ0012		RAR NO OPR		RAR	
[redacted]		[redacted]																					
[redacted]		[redacted]																					
20-May	50002/20	30306	RAR NO OPR		NO OPR		NO OPR		RAR NO OPR		RAR NO OPR			RAR NO OPR		RAR		RAR		RAR		SHUT DOWN 0230	
21-May	50002/20	30306	RAR		AWAITING WRITE UP				V SEALS		DOG BONES			RAR C/W DOG BONES		RAR C/W		RAR NO OPR		RAR NO OPR		RAR OPR 066	
22-May	50002/20	30306	DOG BONES		M&I		M&I		M&I		M&I			M&I		M&I		M&I		M&I		M&I	
23-May	50002/20	30306	M&I		M&I		M&I		SAT		SAT			SOLD EK 50 CK						RAR C/ON		RAR C/ON	

23-May	50002/20	31849					AREA D SORT				31849 RAR C/	RAR C/ON	RAR C/ON	RAR C/O
24-May	50002/20	31849	RAR C/ON	MO MEETING	RAR	RAR	RAR	RAR	RAR	RAR	RAR	RAR	RAR	RAR
25-May	50002/20	31849	RAR	TZ0012	TZ0012	OPR 066	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR OPR 066	RAR OPR 066	RAR OPR 066	RAR OPR
26-May	50002/20	31849	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	SAT	SAT	T/S DOWN SA	SAT
[illegible]	50002/20	31849	SAT	SOLD NEED ELEC OK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	SHUTDOWN 0230	
27-May	50002/20	30690			30690 ASI C/	NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	SHUTDOWN 0230	
29-May	50002/20	30690	ASI C/ON	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI	ASI	ASI	ASI
30-May	50002/20	30690	ASI	ASI	ASI	MOVED 2-19	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI
[illegible]	50002/20	30690	ASI NO OPR	NO OPR	ASI NO OPR	NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	T/S DOWN	ASI	ASI	ASI
1-May	50002/21	CORRELATION		PLUMB	PLUMB	SAT CORRELAT	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	CORRELATION	>	>
[illegible]	50002/21	31804	CORRELATION	CORREL	CORREL COMP	REVIEW WCD	NO OPR	NO OPR	NO OPR	REVIEW	NO OPR	NO OPR	NO OPR	NO OPR
3-May	50002/21	OPEN	>	>	>	>	>	>	>	>	>	51077 RAR C/ON NO OPR		NO OPR
4-Ma	50002/21	51077	SA RAR	SA RAR	SARAR	RAR AW WRITEU	NO OPR	RAR	RAR	RAR	AW REVIEWED	RAR	DEMATE	NO OPR
[illegible]	50002/21	51077	RAR C/OFF	OPEN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ASI	ASI
5-May	50002/21	31656								31656 C/ON	ASI NO OPR C/ON		ASI	ASI
6-May	50002/21	31656	RAR	RAR	RAR	CONT TZ0012	TZ0012	TZ0012	TZ0012	NO OPR	RAR	RAR	RAR	RAR
7-May	50002/21	31656	AW WRITE UP	OPR 066	M&I	M&I DOG BONES	M&I	M&I *	M&I *	M&I	M&J	M&I	M&I	M&I
8-May	50002/21	31656	M&I	T/S DOWN	NO OPR	T/S DOWN	NO OPR	T/S	T/S	T/S	M&I	M&I	M&I	M&I
9-May	50002/21	31656	M&I	M&I	M&I	M&I	M&I	M&I	T/S DOWN M&	M&I	TROUBLESHOOTING TURNONS PROBLEMS			>
[illegible]	50002/21	31656	M&I	M&I	NOT [illegible]	M&I	M&I	M&I	T/S DOWN	T/S DOWN	TROUBLESHOOTING TURN ON		M&I	M&I
11-May	50002/21	31656	M&I	M&I	M&I	DEMATE TO ASI	NO OPR	NO OPR	DEMATE		DEMATE M&I	REPLACING MICRO MATIC SO		ASI SPT
12-May	50002/21	31656	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI NO OPR	ASI NO OPR	SHUTDOWN 0230	
14-May	50002/21	31656	ASI	ASI	ASI	ASI	ASI	ASI	T/S DOWN	ASI	ASI	ASI	ASI	ASI
[illegible]	50002/21	31656	C/OFF	OPEN	[illegible]	[illegible]	NO OPR	NO OPR	NO OPR	[illegible]	ASI	ASI	ASI	[illegible]
16-May	50002/21	51010	RAR	RAR	SA RAR	SA RAR	NO OPR	NO OPR	NO OPR	RAR	RAR	RAR	RAR	RAR
[illegible]	50002/21	51010	OPR 066	OPR 066	OPR 066	OPR 066	OPR 066	NO OPR	READY FOR DEMATE	[illegible]	ASI	ASI	ASI	ASI
18-May	50002/21	32945	FLUSH PLUMB		SA RAR	SA RAR	NO OPR	NO OPR	NO OPR	RAR	RAR	RAR	RAR	RAR
19-May	50002/21	32945	RAR COMPLET	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	SHUTDOWN 0230	
21-May	50002/21	32945	M&I	M&I	M&I	SAT	SAT	SAT	SAT	SAT	T/S DOWN SA	SAT	SAT	SAT
[illegible]	50002/21	32945	SOLD C/OFF	NOTE	MATRIX	MATRIX	SAT MATRIX	SAT MATRIX	SAT MATING	SAT SOLD		32945 C/OFF		
22-May	50002/21	51007									51007		51007 C/ON	M&I
23-May	50002/21	51007	M&I C/ON	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
24-May	50002/21	51007	M&I	MO MEETING	M&I	M&I *	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
25-May	50002/21	51007	M&I	M&I	M&I	M&I	M&I	M&I	M&I	SAT	SAT	SAT	SOLD C/OFF	C/OFF
[illegible]	50002/21	51007	SAT C/OFF	NO OPR	OPEN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26-May	50002/21	30530				30530	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR NO C/ R C/ON		RAR NO OPR	RAR NO O
27-May	50002/21	30530	RAR NO OPR	NO OPR	NO OPR	RAR C/ON	RAR C/ON	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	SHUTDOWN 0230	
29-May	50002/21	30530	RAR C/ON	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR	RAR	RAR	RAR	RAR	RAR	RAR	RAR
[illegible]	50002/21	30580	OPR 064	REJECT C/OFF	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	M&I	M&I	M&I	M&I
30-May	50002/21	52061			52061 C/ON	PLUMB	M&I	M&I	T/S DOWN	T/S DOWN				
[illegible]	50002/21	52061	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
1-May	50002/22	OPEN	>	>	>	>	>	OPEN			NEED CORRELATION		>	>
2-May	50002/22	OPEN	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	AW CORREL CONTROL		AW CORREL C	AW CORR
3-May	50002/22	CORRELATION CONTROL		C/ON	SAT	CORRELATION	>	>	>	>				
[illegible]	50002/22	31804	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	31804 CORREL CONTROL REVIEW COMPLETE			
3-May	50002/22	51901												51901 MA
4-May	50002/22	OPEN	>	>	>	>	>	>	>	>	52006	OPEN	ASI	NO OPR
4-May	50002/22	52006												
5-May	50002/22	OPEN	>	>	>	>	NO OPR	NO OPR	NO OPR	52006 C/ON	ASI NO OPR C/ON		ASI	>
5-May	50002/22	52006												
6-May	50002/22	52006	ASI NO OPR	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI
7-May	50002/22	52006	C/ON NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	C/ON ASI	ASI NO OPR	ASI	ASI	ASI
8-May	50002/22	52006	ASI PLUMB	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	ASI C/ON	ASI NO OPR	ASI	ASI	ASI
9-May	50002/22	52006	ASI C/ON	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	ASI	ASI C/ON	ASI	ASI	ASI
10-May	50002/22	52006	ASI C/ON	ASI C/ON	ASI C/ON	ASI C/ON	NO OPR	NO OPR	NO OPR	ASI C/ON	ASI PLUMB NO OPR		NO OPR	NO OPR
11-May	50002/22	52006	ASI C/ON	ASI	ASI C/ON	ASI	NO OPR	NO OPR	ASI C/ON		ASI C/ON	ASI C/ON	ASI C/ON	ASI C/ON
12-May	50002/22	52006	ASI C/OFF	NO OPR	NO OPR	NO OPR	ASI C/OFF	ASI C/OFF	ASI C/OFF	ASI C/OFF	ASI C/OFF	ASI C/OFF	SHUTDOWN 0230	
14-May	50002/22	52006	C/ON NO OPR	C/ON NO OPR	C/ON NO OPR	C/ON NO OPR	NO OPR	NO OPR	NO OPR	ASI C/ON	ASI	ASI	ASI	ASI
15-May	50002/22	52006	ASI NO OPR	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI	ASI	ASI	ASI
16-May	50002/22	52006	ASI	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI	ASI	ASI	T/S DOW
17-May	50002/22	52006	ASI	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI	ASI	ASI	ASI
18-May	50002/22	52006	ASI NO OPR	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI
19-May	50002/22	52006	ASI NO OPR	NO OPR	NO OPR	NO OPR	ASI NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	SHUTDOWN 0230	
21-May	50002/22	52006	ASI	ASI DOWNTIME *		ASI *	ASI T/S DOWN	ASI T/S UP	ASI O/B	ASI O/B	ASI	ASI	ASI	ASI
22-May	50002/22	52006	ASI	T/S DOWN	PROBLEM W/ SWITCH		ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO O
23-May	50002/22	52006	ASI	ASI	ASI	T/S NO OPR	ASI NO OPR	ASI NO OPR	ASI NO ORP	ASI NO OPR	ASI NO OPR	ASI	ASI	ASI
24-May	50002/22	52006	ASI	MO MEETING	DOGBONES	ASI *	ASI *	ASI	ASI	ASI	ASI	ASI	ASI	ASI
25-May	50002/22	52006	ASI	ASI	ASI	ASI	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO O

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26-May	50002/22	52006	ASI TO MACH SHOP		C/ON	READY TO MATE	[illegible]	MATING COMPLETED		M&I NO OPR	M&I NO OPR	M&I	M&I	M&I
27-May	50002/22	52006	M&I NO OPR	NO OPR	M&I NO OPR	M&I NO OPR	M&I NO OPR	M&I NO OPR	M&I NO OPR	M&I NO OPR	M&I NO OPR	M&I NO OPR	SHUTDOWN 0230	
29-May	50002/22	52006	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
30-May	50002/22	52006	M&I	M&I	SAT	SAT	SAT	SAT	SAT	SAT	SAT	SAT	SOLD C/OFF	C/OFF
[illegible]	50002/22	52006	SAT C/OFF	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	50002/22	50118	[illegible]	50118 C/ON	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
[illegible]	50002/23	51112	SAT	SAT	SAT	SAT	BACK TO M&I	M&I	M&I	SAT	SAT	EK 50 SAT	SAT SOLD	[illegible]
1-May	50002/23	51999												51999 M
2-May	50002/23	51999	M&I	M&I	M&I	M&I •	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
[illegible]	50002/23	[illegible]	[illegible]	SAT	SAT	SAT	SAT	SOLD	EK 50	C/OFF	[illegible]	[illegible]	[illegible]	[illegible]
3-May	50002/23	52554									52554	ASI TO MATE	BROKEN D PAA CONNEC	
4-May	50002/23	52554	MATE/NO OPR	NO OPR	NO OPR	NO OPR	MATING	MATING	MATED	M&I	M&I	M&I	DEMATING	REMATIN
5-May	50002/23	52554	M&I	M&I	M&I	CONT TO DEMAT	DEMATED BAD	DEMATE	C/OFF BAD RC	WENT TO MACHINE SHOP		>	NO OPR	>
[illegible]	50002/23	52554	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	52554 IN MACHINE SHO		[illegible]	NO OPR
6-May	50002/23	50456	M&I	SAT	SAT	SAT	SAT	SAT	SOLD	EK 50	C/OFF	OPEN		
[illegible]	50002/23	50625	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	50625 C/ON	NO OPR
7-May	50002/23	52554	M&I	M&I	M&I	M&I •	M&I •	M&I •	M&I •	M&I •	M&I	M&I	M&I	M&I
8-May	50002/23	52554	M&I	M&I	SAT	SAT	SAT	SAT	SAT	NOTE	SP CK	SAT SOLD	C/OFF	OPEN
[illegible]	[illegible]	OPEN	[illegible]	[illegible]	[illegible]	[illegible]	>	>	>	>	RAR C/ON	RAR	RAR	RAR NO O
10-May	50002/23	30977	RAR C/ON	RAR	RAR	RAR	NO OPR	NO OPR	NO OPR	RAR C/ON	RAR NO OPR	RAR	RAR	RAR
11-May	50002/23	30977	RAR C/ON	RAR C/ON	RAR	RAR	NO OPR	NO OPR	RAR C/ON		RAR PLUMB	RAR PLUMB	RAR	RAR
12-May	50002/23	30977	RAR	RAR	RAR	RAR	AWAITING WRITE UP		RAR COMPLETED		RAR COMPLET	RAR COMP	SHUTDOWN 0230	
14-May	50002/23	30977	TZ0012	TZ0012	TZ0012	AWAITING WRITE UP		NO OPR	NO OPR	C/OFF	RAR C/OFF	RAR	RAR	RAR
[illegible]	50002/23	30977	C/OFF	OPEN	[illegible]	[illegible]	OPEN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15-May	50002/23	51630								51630	RAR	C/ON	>	>
[illegible]	50002/23	51630	SA RAR	SA RAR	SA RAR	RAR COMPLETED	NO OPR	NO OPR	NO OPR	C/OFF	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR NO O
17-May	50002/23	30527	RAR C/ON	SA RAR	SA RAR	SA RAR	NO OPR	NO OPR	NO OPR	RAR	RAR	RAR	RAR	FAR
18-May	50002/23	30527	RAR COMPLETED		NO OPR	NO OPR	NO OPR	NO OPR	WRITE UP	RAR NO OPR	RAR OP 066	RAR	RAR	RAR
19-May	50002/23	30527	DEMATE TO A	NEED TO PREPARE FOR ASI		NO OPR	ASI	ASI	ASI	ASI	ASI	ASI	SHUTDOWN 0230	
21-May	50002/23	30527	ASI	ASI •	ASI •	ASI •	ASI	ASI	ASI	GG READY/ON	ASI	MATING TO M	M&I	M&I
22-May	50002/23	30527	M&I	M&I	M&I	M&I •	M&I	M&I	M&I	M&I	M&I	M&I	DEMATING	MATING
23-May	50002/23	30527	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
24-May	50002/23	30527	M&I	MO MEETING	M&I	M&I	M&I •	M&I	M&I	M&I	SAT	SAT	SAT	SOLD C/
[illegible]	[illegible]	30527	SAT C/OFF	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25-May	50002/23	51663		51663	ASI C/ON	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO O
26-May	50002/23	51663	ASI C/ON	NO OPR	ASI	ASI	ASI	ASI NO OPR	ASI	ASI	ASI	ASI	ASI	ASI
27-May	50002/23	51663	ASI NO OPR	ASI NO OPR	NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI	ASI	SHUTDOWN 0230	
29-May	50002/23	51663	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI	ASI	ASI	ASI
30-May	50002/23	51663	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI COM
31-Ma[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	M&I	M&I	M&I	M&I
1-May	50002/24	31488	TZ0012	TZ0012	TZ0012	TZ0012	NO OPR	NO OPR	NO OPR	TZ0012	RAR 066	RAR	RAR	RAR
2-May	50002/24	31488	M&I	M&I •	M&I	M&I	NO OPR	NO OPR	M&I	M&I	TROUBLESHOOTING		M&I	M&I
3-May	50002/24	31488	M&I	M&I	M&I	GG COMPLETED	M&I	M&I	M&I	M&I	M&I	SAT	SAT	SAT
[illegible]	50002/24	31488	SAT	[illegible]	SAT ELEC	SOLD C/OFF	C/OFF	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4-May	50002/24	50456						50456 C/ON	NO OPR	FLUSH & PLUMB FOR M&I		M&I	M&I	M&I
5-May	50002/24	50456	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
[illegible]	50002/24	52581	RAR NO OPR	RAR	NO OPR	RAR NO OPR	RAR	RAR	RAR	RAR	NO OPR	NO OPR	NO OPR	NO OPR
7-May	50002/24	50625	ASI C/ON	ASI MATRIX	ASI	ASI MATRIX	NO OPR	NO OPR	NO OPR	ASI	NO OPR ASI	NO OPR	NO OPR	NO OPR
8-May	50002/24	50625	ASI MATRIX	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI COMPLET	AW GG OM TE	ASI	ASI
9-May	50002/24	50625	ASI SAFETY WIRE CK		MATE	MATE	MATING	MATING	NO OPR	M&I	M&I	M&I	M&I	M&I
10-May	50002/24	50625	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
11-May	50002/24	50625	M&I	SAT	SAT	SOLD EK 50	NO OPR	NO OPR	EK 50		SOLD SAT C/O	OPEN		
11-May	50002/24	50222											50222 ASI C/ON	
12-May	50002/24	50222	ASI NO OPR	NO OPR	NO OPR	ASI C/ON	ASI C/ON	ASI C/ON	ASI C/ON	ASI C/ON	ASI C/ON	ASI C/ON	SHUTDOWN 0230	
14-May	50002/24	50222	ASI C/ON	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI	ASI	ASI	ASI
15-May	50002/24	50222	ASI	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI	ASI	ASI	ASI
16-May	50002/24	50222	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI	ASI
17-May	50002/24	50222	ASI	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI	SPLITTER PROBLEMS		ASI
[illegible]	50002/24	50222	ASI	ASI	REJECT NOTE	OPEN	OPEN	OPEN	OPEN	OPEN	RAR C/ON	NO OPR	NO OPR	NO OPR
19-May	50002/24	31303	RAR TO BE INSTALLED		NO OPR	NO OPR	RAR C/ON	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR	SHUTDOWN 0230	
21-May	50002/24	31303	PLUMBING RAI	RAR	RAR	RAR	RAR	RAR	RAR	RAR	RAR	RAR NO OPR	RAR TZ0012	RAR TZ0
22-May	50002/24	31303	TZ0012	TZ0012	TZ0012	TZ0012	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR TZ0012	RAR NO OPR	RAR TZ0012	RAR TZ0012	RAR TZ0
23-May	50002/24	31303	TZ0012	OPR 066	SPLITTER	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
24-May	50002/24	31303	M&I	MO MEETING	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I
25-May	500C2/24	31303	M&I T/S DOW	M&I TURN ONS	M&I	M&I	M&I	M&I T/S DOW	SAT	SAT	SAT	SAT	SOLD C/OFF	OPEN
[illegible]	50002/24	OPEN	>	>	>	>								
26-May	50002/24	30684						30684 C/ON	PLUMBING	M&I	M&I	M&I	M&I	M&I
27-May	50002/24	30684	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	SAT	SHUTDOWN 0230	

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29-May	50002/24	31638									31638	RAR PLUMBIN	RAR		RAR	RAR
30-May	50002/24	31638	RAR	NO OPR	NO OPR	CONT W/DUMP VALVE		GG COMPLETE	CONT AUGGIE	M&I		M&I		M&I		M&I
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1-May	50002/25	31054										30T54	RAR C/ON	PLUMB		RAR
2-May	50002/25	31054	OP 066	M&I	M&I SPOT CK	M&I		M&I	M&I	M&I	M&I	M&I		M&I		M&I
3-May	50002/25	31054	M&I	M&I	M&I	M&I		M&I	M&I	SAT	SAT	SAT		SAT		SAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4-May	50002/25	52531			52531 RAR C/	PLUMB RAR		NO OPR	NO OPR	NO OPR	NO OPR	RAR PLUMB		RAR		RAR
5-May	50002/25	52531	RAR NO OPR	RAR	RAR	RAR		RAR	NO OPR	NO OPR	NO OPR	RAR NO OPR		RAR		RAR
6-May	50002/25	52531	RAR NO OPR	NO OPR	NO OPR	RAR		RAR NO OPR	RAR	RAR	RAR	RAR NO OPR		RAR		RAR
7-May	50002/25	52531	SA RAR NO OP	NO OPR	NO OPR	NO OPR		NO OPR	RAR	RAR	RAR	RAR NO OPR		RAR		RAR
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9-May	50002/25	51917	SA RAR C/ON	SA RAR	NO OPR	NO OPR		NO OPR	NO OPR	NO OPR	RAR	RAR C/ON		RAR		RAR
10-May	50002/25	51917	RAR	RAR	RAR	RAR OPR 066		NO OPR	NO OPR	NO OPR	NO OPR	RAR C/OFF		RAR NO OPR		RAR
11-May	50002/25	51917	RAR C/OFF	RAR C/OFF		RAR C/OFF		NO OPR	NO OPR	RAR C/OFF		RAR C/ON		RAR C/OFF		RAR C/OFF
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14-May	50002/25	DUE CALIBRATION	50871 M&I C/OFF			C/OFF		C/OFF	C/OFF	C/OFF	CALIBRATION	T/S DUE CALIBRATION		>		>
15-May	50002/25	CALIBRATION	>	>		>		>	>	>	>	CALIBRATION	>	>		>
16-May	50002/25	CALIBRATION	>	>		>		>	>	>	>	T/S DUE CALIBRATION		>		>
17-May	50002/25	CALIBRATION	>	>		>		>	>	>	>	>	>	>		>
18-May	50002/25	CALIBRATION	>	>		>		>	>	>	>	>	>	>		>
19-May	50002/25	DUE CALIBRATION				NO WORK DONE DUE TO CALIBRATION			CALIBRATION			CALIBRATON		SHUTDOWN 0230		
21-May	50002/25	CALIBRATION						CALIBRATION	CALIBRATION			CALIBRATION		CALIBRATION		
22-May	50002/25	CALIBRATION			CALIBRATION			CALIBRATION				OPEN T/S CALIBRATION				
23-May	50002/25	T/S DUE CALIBRATON				BEING CALIBRATED						OPEN T/S CALIBRATION				
24-May	50002/25	OPEN		NO MEETING	T/S READY	OPEN		READY FOR CORRELATION CONTROL			WAITING FOR CORRELATION	PAR NO OPR		NO OPR		NO OPR
25-May	50002/25	NEED CORRELATION CONTROL		>		>		>	>	>	>	CORRELATION	CONTROL	>		>
26-May	50002/25	OPEN	>	>		>		CALIBRATION	>	>	>	>	>	>		>
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29-May	50002/25	CORRELATION CONTROL	C/ON	M&I	T/S DOWN	CORRELATION CONTROL		NO OPR	NO OPR							
29-May	50002/25	31809									31809	CORRELATION	CONTROL		'A' FRAME BRING LEAK	
30-May	50002/25		CORRELATION	CONTROL	T/S DOWN	T/S DOWN										
30-May	50002/25	31804						31804	CORRELATION CONTROL		T/S STILL DOWN	CORRELATION	CORRELATION	CORRELATION	CORREL	
31-May	50002/25		CORRELATION	CONTROL	T/S DOWN	NO OPR										
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1-May	50002/30	52463	ASI NO OPR	NO OPR	NO OPR	NO OPR		NO OPR	NO OPR	NO OPR	ASI	ASI NO OPR	ASI NO OPR	ASI		ASI
2-May	50002/30	52463	M&I	NO OPR	NO OPR	NO OPR		NO OPR	NO OPR	NO OPR	ASI	ASI NO OPR	ASI	ASI		ASI
3-May	50002/30	52463	ASI	NO OPR	NO OPR	NO OPR		NO OPR	NO OPR	NO OPR	ASI	ASI NO OPR	ASI	ASI		ASI
4-May	50002/30	52463	ASI	ASI	ASI	ASI		NO OPR	NO OPR	NO OPR	NO OPR	ASI NO OPR	ASI	ASI		ASI
5-May	50002/30	52463	ASI	ASI NO OPR	ASI	ASI		ASI	ASI	ASI	ASI	ASI	ASI	ASI		ASI
6-May	50002/30	52463	ASI	OPR MOVED	NO OPR	NO OPR		ASI	ASI	ASI	ASI	ASI NO OPR	ASI	ASI		ASI
7-May	50002/30	52463	ASI	ASI	ASI	ASI		NO OPR	NO OPR	ASI	ASI	ASI	ASI	ASI		ASI
8-May	50002/30	52463	ASI	ASI	ASI	ASI		ASI	ASI	ASI	ASI	ASI SPT CK	ASI	ASI		ASI
9-May	50002/30	52463	ASI	ASI	ASI	ASI		NO OPR	NO OPR	NO OPR	ASI	SUPER FLUSH	READY TO MA	MATING		PLUMBING
10-May	50002/30	52463	ASI	ASI	ASI	ASI		ASI	O/B ASI	ASI			M&I	M&I		M&I
11-May	50002/30	52463	M&I	M&I	M&I	M&I		M&I	M&I				M&I	M&I		M&I
12-May	50002/30	52463	M&I	M&I	M&I	M&I		M&I	M&I	M&I	SAT		SAT	SAT		SHUTDOWN 0230
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15-May	50002/30	50871	ASI C/ON	ASI	ASI	ASI		NO OPR	NO OPR	NO OPR	ASI	ASI	ASI	ASI C/OFF		RAR C/O
16-May	50002/30	50871	ASI	ASI	ASI	ASI		ASI	ASI	ASI	ASI	ASI	ASI	MATE		MATING
17-May	50002/30	50871	M&I	M&I	M&I	M&I		M&I	M&I	M&I	M&I	M&I	M&I	M&I		M&I
18-May	50002/30	50871	M&I	M&I	M&I	M&I		M&I	M&I	M&I	M&I	M&I	M&I	M&I		SAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19-May	50002/30	51228				51228		M&I	M&I	M&I	M&I	M&I	M&I	SHUTDOWN 0230		
21-May	50002/30	51228	DOWNTIME M&I		M&I	M&I										
22-May	50002/30	51228	M&I	M&I	M&I	M&I		M&I	M&I	M&I	M&I	M&I	M&I	M&I		M&I
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23-May	50002/30	30684														
24-May	50002/30	30684	RAR C/ON	NO MEETING	RAR	RAR		RAR	RAR	RAR	RAR	RAR	RAR	RAR		PAR
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26-May	50002/30	OPEN	>	>	>	>		CALIBRATION	>	>	>	>	>	>		>
27-May	50002/30	T/S DUE CALIBRATION		OPEN	OPEN	DUE CALIBRATI		OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	SHUTDOWN 0230		
29-May	50002/30	T/S DUE CALIBRATION	>	>		>		DUE CALIBRATION		>	>	DUE CALIBRATION		>		>
30-May	50002/30		T/S DUE CALIBRATION			CALIBRATION			CALIBRATION			BEING CALIBRATED				
31-May	50002/30		T/S DUE CALIBRATION					DUE CALIBRATION				CALIBRATION				
1-May	50002/31	30818	M&I OP 066	M&I	M&I	M&I		NO OPR	NO OPR	NO OPR	NO OPR	M&I	M&I	M&I		M&I

2-May	50002/31	30818	M&I		NO OPR		M&I		M&I		M&I REA D SOP		M&I		M&I		M&I		PROBLEM W/LINE		M&I		M&I
3-May	50002/31	30813			M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I
4-May	50002/31	30818	SAT		SAT		SAT		SAT		SAT		EK 50		C/OFF		C/OFF		C/OFF		OPEN		NO OPR
5-May	50002/31	OPEN	>		>		>		>		NO OPR		NO OPR		NO OPR								
5-May	50002/31	51207															51207 C/ON		NO OPR ASI C/ON		NO OPR		NO OPR
6-May	50002/31	51207	ASI C/ON		NO OPR		NO OPR		ASI C/ON		ASI		ASI		ASI		ASI		ASI		ASI		ASI
7-May	50002/31	51207	ASI		ASI		ASI		ASI *		NO OPR		NO OPR		NO OPR		ASI		ASI		ASI		ASI
8-May	50002/31	51207	ASI NO OPR		ASI		ASI		ASI *		NO OPR		NO OPR		NO OPR		ASI		ASI		ASI		ASI
9-May	50002/31	51207	ASI		ASI		ASI		ASI		ASI		ASI		REJECT								
9-May	50002/31	52054													52054 C/ON		MATE		MATING		M&I		M&I
10-May	50002/31	52054	M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		T/S DOWN		T/S UP		M&I
11-May	50002/31	52054	M&I		M&I		M&I		M&I		M&I		M&I		M&I				M&I				SAT
12-May	50002/31	52054	SAT		SAT		SOLD		C/OFF		SAT C/OFF		M&I NO OPR		M&I		M&I		M&I		M&I		SHUTDOWN 0230
14-May	50002/31	31121	M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		SAT
15-May	50002/31	31121	SAT		SAT		SAT		SAT		SAT		T/S DOWN		T/S DOWN		SAT		SAT		SAT		SOLD C/O
15-May	50002/31	31121	SAT C/OFF		FLUSH		RAR		RAR														
16-May	50002/31	32211									32211		NO OPR		NO OPR		NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR
17-May	50002/31	32211	DOG BONES		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I
18-May	50002/31	32211	M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		REJECT GOVT HYST.		
18-May	50002/31	31291																					31291 C
19-May	50002/31	31291	RAR		PLUMB RAR		RAR		NO OPR RAR		RAR NO OPR		RAR NO OPR		RAR		RAR		RAR		RAR		SHUTDOWN 0230
21-May	50002/31	31291	RAR		RAR		AW WRITE UP		TROUBLESHOOTI		RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR OP 066		RAR NO OPR		RAR NO OPR
22-May	50002/31	31291	OPR 066 SPLIT		TER		OPR 066		NO OPR		RAR NO OPR		M&I		M&I		M&I		M&I		M&I		M&I
23-May	50002/31	31291	TZ0012 M&I		M&I *		M&I		M&I		M&I *		M&I *		M&I *		M&I *		M&I		M&I		M&I
24-May	50002/31	31291	M&I		MO MEETING		M&I		M&I		M&I *		M&I *		M&I *		M&I *		M&I		M&I		M&I
25-May	50002/31	31291	M&I T/S DOWN		M&I		M&I		M&I		M&I		M&I		SAT		SAT		SAT		SOLD C/OFF		C/OFF
26-May	50002/31	31291	SAT C/OFF		NO OPR		T/S DUE CALIBRATION		>		>		>		>		>		>		>		>
27-May	50002/31	T/S DUE CALIBRATION			OPEN		OPEN		DUE CALIBRATO		OPEN		OPEN		OPEN		OPEN		OPEN		OPEN		SHUTDOWN 0230
29-May	50002/31	T/S DUE CALIBRATION			>		>		>		DUE CALIBRATION				>		>		DUE CALIBRATION		>		>
30-May	50002/31		T/S DUE CALIBRATION						CALIBRATION						CALIBRATION				BEING CALIBRATED				
31-May	50002/31		T/S DUE CALIBRATION								DUE CALIBRATION								CALIBRATION				
1-May	50002/32	30169	SA RAR		RAR OPR 066		OPR 066		M&I		NO OPR		NO OPR		NO OPR		OPR 066		RAR 066		RAR		RAR
2-May	50002/32	52586	RAR PLUMB		RAR		NO OPR		NO OPR		PLUMBING		RAR		RAR		RAR		RAR NO OPR		RAR		RAR
4-May	50002/32	30169	RAR DEMATE C/OFF																				
4-May	50002/32	30662			30662 PRN		TROUBLESHOOTI		AW OCM TEAM		NO OPR		NO OPR		NO OPR		M&I C/OFF		REMOVED 30662		RAR C/ON		NO O PLUMBIN
4-May	50002/32	51786	RAR		RAR		RAR		RAR		NO OPR		NO OPR		NO OPR		NO OPR		RAR NO OPR		RAR 066		REVIEW RAR COMPLETE
5-May	50002/32	OPEN	51786 REMOVED				OPEN		>		NO OPR		NO OPR		NO OPR								
5-May	50002/32	52010															52010 C/ON		NO OPR C/ON		NO OPR		NO OPR
6-May	50002/32	52010	RAR NO OPR		NO OPR		NO OPR		NO OPR		NO OPR		NO OPR		NO OPR		NO OPR		RAR NO OPR		RAR		RAR
7-May	50002/32	52010	RAR C/ON		SA RAR		SA RAR		NO OPR		RAR PLUMB		NO OPR		NO OPR		RAR		RAR		RAR		RAR
8-May	50002/32	30885	REMOVED		ASI		ASI NO OPR		AASI		ASI		ASI		ASI *		ASI		ASI		ASI		ASI
9-May	50002/32	30885	ASI		ASI		ASI		ASI		ASI		DEMATE		NO OPR		C/OFF		REJECT ASI C/OFF		C/OFF		C/OFF
10-May	50002/32	30885	ASI C/OFF		NO OPR		ASI C/OFF		ASI C/OFF		NO OPR		NO OPR		NO OPR		NO OPR		ASI NO OPR C/OFF		ASI		ASI
11-May	50002/32	30885	ASI C/OFF REJECT				REJECT		ASI C/OFF		NO OPR		NO OPR		ASI C/OFF				ASI C/OFF		ASIC/OFF		ASI C/OFF
12-May	50002/32	30885	ASI C/OFF		NO OPR		NO OPR		ASI NO OPR		ASI C/OFF		ASI C/OFF										
12-May	50002/32	32610													32610 ASI C/ON				ASI PLUMB		ASI		SHUTDOWN 0230
14-May	50002/32	32615	ASI		ASI		ASI		ASI		ASI		ASI		ASI		ASI		ASI		ASI		ASI
15-May	50002/32	32615	ASI		ASI		ASI		ASI		NO OPR		NO OPR		NO OPR		ASI		ASI		ASI		MATING
16-May	50002/32	32615	M&I		DEMATE LEAK		MATING		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I
17-May	50002/32	32615	SPOT CK		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I
18-May	50002/32	32615	M&I		M&I		ASI DEMATE		ASI MATRIX NOT		NO OPR		NO OPR		NO OPR		ASI		ASI		ASI		ASI
19-May	50002/32	32615	ASI		MATRIX TO M		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		SHUTDOWN 0230
21-May	50002/32	32615	M&I		M&I		M&I *		M&I *		M&I		M&I		M&I		M&I		M&I		M&I		M&I
22-May	50002/32	32615	SAT		SAT		SAT SPT CK		SAT		SAT		SAT SOLD		SAT C/OFF		SA REJECTED						
22-May	50002/32	32268																	32268		RAR C/ON		NO OPR
23-May	50002/32	32268	RAR C/ON		OPR 066		SAT		SAT		SAT		SAT		PLATE SCREWS SAT				MATRIX		SAT		SAT MATRIX
24-May	50002/32	32268	MATRIX		MO MEETING		SAT MATRIX		SAT		SAT		TRANSFERRED TO T/S				RAR C/ON		RAR C/ON		RAR C/ON		RAR C/ON
25-May	50002/32	32059	RAR C/ON		NO OPR		NO OPR		RAR C/ON		RAR C/ON		RAR C/ON		RAR C/ON		RAR C/ON		RAR PLUMB		RAR PLUMB		RAR PLU
26-May	50002/32	32059	RAR		RAR		SYSTEM DOWN		>		RAR E 10		NO OPR		RAR NO OPR		RAR NO OPR		RAR C/ON		RAR C/ON		RAR C/ON
27-May	50002/32	32059	RAR NO OPR C/ON				NO OPR		RAR NO OPR C/O		RAR		RAR NO OPR		NO OPR		NO OPR		NO OPR		NO OPR		SHUTDOWN 0230
29-May	50002/32	32059	T/S DOWN		T/S DOWN		NOTE		RAR NO OPR		RAR		RAR		RAR		RAR		RAR		RAR TZ0012		RAR
30-May	50002/32	32059	TZ0012		TZ0012		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I		M&I
31-May	50002/32	32059	M&I		M&I		M&I		SAT		SAT		SAT		SOLD EK 50		SAT REMOVED		OPEN				
31-May	50002/33	52054	M&I		M&I		M&I		M&I		NO OPR		NO OPR		NO OPR		M&I		TROUBLESHOOTING		REJECT SPEED SHIFT		
1-May	50002/33	52580																					
2-May	50002/33	52586	TST		>		RAR OP 066		C/OFF														
3-May	50002/33	31665							31665 C/ON RA		NO OPR		NO OPR		NO OPR		RAR C/ON		RAR NO OPR		RAR		RAR
4-May	50002/33	31665	SA RAR		SA RAR		SA RAR		SA RAR		NO OPR		NO OPR		NO OPR		NO OPR		RAR NO OPR		RAR		RAR

5-May	50002/33	31665	RAR OPR 066	RAR	M&I	M&I	M&AREA D SO	M&I C/ON	M&I	M&I	M&I	M&I	M&I	M&I
6-May	50002/33	31665	M&I	>	DEMATING	ASI	ASI	ASI	ASI	ASI	SPOT CK	SPT CK	SPT CK	SPT CK
7-May	50002/33	31665	ASI	ASI	ASI	MATE	MATE	MATE	PLUMBING	PLUMB	PLUMB	M&I SPOT CK	M&I	M&I
8-May	50002/33	31665	M&I	M&I	M&I	M&I	M&I	M&I *	M&I	SAT	SAT	SAT	SAT	SAT
[redacted]														
9-May	50002/33	50641			50641 ASI C/ON		ASI	ASI	NO OPR	ASI				
10-May	50002/33	50641	ASI	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI	DUMB VALVE	ASI	ASI
11-May	50002/33	50641	ASI	DOGBONES	ASI	ASI	NO OPR	NO OPR	ASI	NO OPR	NO OPR	NO OPR	NO OPR	NO OPR
[redacted]														
14-May	50002/33	52135	ASI	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI	ASI	ASI	ASI
15-May	50002/33	52135	ASI	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO O
16-May	50002/33	52135	ASI	ASI	ASI	ASI	NO OPR	ASI	ASI	ASI	ASI	ASI	ASI	ASI
17-May	50002/33	52135	ASI	ASI	ASI	ASI	NO OPR	NO OPR	NO OPR	ASI	ASI	ASI	ASI	ASI
18-May	50002/33	52135	ASI	ASI	ASI	ASI SUPER FLUS	SAT	READY TO MA	MATING	M&I	M&I	M&I	M&I	M&I
19-May	50002/33	52135	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	M&I	SHUTDOWN 0230	
21-May	50002/33	52135	M&I	M&I	M&I	M&I	M&I	M&I	M&I	DEMATE M&I REJECT		ASI	ASI	
22-May	50002/33	52135	ASI	ASI	NO OPR	ASI	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI NO OPR	ASI SPT CK	ASI SPT CK	ASI SPT CK	READY T
23-May	50002/33	52135	BEING MATED	PLUMB	M&I	M&I	M&I	SAT	FINAL SAFETY	M&I *	M&I	M&I	M&I	SAT
24-May	50002/33	52135	SAT	MO MEETING	SAT	SAT	SAT	SAT*	SAT *	M&I	SAT	SAT	SAT	SAT
[redacted]														
25-May	50002/33	30684									30684	RAR TZ0012	AW WRITEUP	M&I
[redacted]														
26-May	50002/33	31997								31997	RAR NO OPR	RAR NO OPR	RAR NO OPR	RAR NO O
[redacted]														
30-May	50002/33	31997	NO OPR RAR C/ON		NO OPR	NO OPR	RAR	RAR	RAR	RAR	RAR	RAR OPR 066	RAR OPR 066	RAR OP
[redacted]														
[redacted]											OPEN	NO OPR	NO OPR	NO OPR
[redacted]														
11-May	50173/06	51128							51128					
[redacted]														
14-May	50173/06	50172	COMP C/ON	PG 4	PG 5	>			COMP		64000	NO OPR	>	>
[redacted]														
16-May	50173/06	31625							31625	COMP				64000
[redacted]														
17-May	50173/06	52043				52043	>	>	NO OPR		NO OPR 66000		>	>
18-May	50173/06	52043	PG 4	PG 5	PG 6	PG 6				NO OPR				
19-May	50173/06	52043	62000	POSSIBLE REJECT	87000	C/OFF REJECT								
[redacted]														
23-May	50173/06	31179	C/ON	PROBLEMS WAITS		PG 6					66000	A J PROBS	66000	66000
[redacted]														
25-May	50173/06	OPEN												
30-May	50173/06	30962	PG 5	AJ. PROBLEN	7	10					PLAP	POSSIBLE REJ	87000	66000
31-May	50173/06	30462	PG 10	PG 10	REJECT	C/OFF					REMOVED			
31-May	50173/06	50486										50486 C/ON		91000
5-May	50173/07	31911	66000	SOLD C/OFF										66000
5-May	50173/07				52081 C/ON	85000	NO OPR	NO OPR	NO OPR	NO OPR	REJECT SEG	50486	AJ HYSTER PR	66000
7-May	50173/07	86000 TRANS HOLD AND DELAY												
8-May	50173/07	31121	88000	AJ RESET										
9-May	50173/07	50481	66000			FILL & HOLD	87000	SOLD & REMOVED						
9-May	50173/07	30144							30144 C/ON	85000	NO OPR	NO OPR	NO OPR	NO OPR
10-May	50173/07	30144		COMPLETE	SOLD			W/O 90130 - 339						
10-May	50173/07	30152								30152	T/S DOWN W/O 90130-339		T/S DOWN	
11-May	50173/07	T/S DOWN 0630 - 1030					D/T ALL DAY							
12-May	50173/07	OPEN	>	>	>	>	>	>	>	>	>	NO OPR	SHUTDOWN 0230	
14-May	50173/07	OPEN		>	>	>	>	>	>	>	>	>	NO OPR	
15-May	50173/07	OPEN	>	>	>	>	>	>	>	>	>	>	NO OPR	NO OPR
16-May	50173/07	OPEN	>	>	>	>	>	>	>	>	>	>	>	91000
17-May	50173/07	OPEN	>	>	>	>	>	>	>	>	>	>	>	NO OPR
18-May	50173/07	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	NO OPR				

061007

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1																													
2	DATE	TEST STAND	S/N	8:30		10:30		12:30		14:00		X	16:30		18:30		20:30		22:00		X	0:30		2:30		4:30		6:00		
3												X									X								
4	25-May	50001/14	51590							51590 M&I C		X	M&I C/ON		CONT TO PLUMB				M&I		X	M&I		M&I		M&I		M&I	
5	1-May	50002/06	51004	ASI		ASI		ASI		ASI		X	ASI		ASI		NO OPR		NO OPR		X	NO OPR		HOLD		HOLD		HOLD	
6	2-May	50002/06	51004	ASI C/O		ASI		REJECT		C/ON		X	ASI C/ON		NO OPR		NO OPR		ASI C/ON		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
7	3-May	50002/06	50543	ASI		ASI		ASI		ASI		X	ASI		NO OPR		NO OPR		NO OPR		X	NO OPR		ASI		ASI		ASI	
8	4-May	50002/06	50543	ASI		ASI		TROUBLESHOOTING				X	ASI		NO OPR		ASI		ASI *		X	ASI		NO OPR		NO OPR		NO OPR	
9	5-May	50002/06	50543	ASI		ASI		ASI		SUPER PLUM		X	MATING FOR M&I				M&I		REMOVE		X	NO OPR		NEEDS TO GO TO MACHINE SHOP					
10	6-May	50002/06	50543	REMATED		READY TO PLUMB				M&I		X	M&I		M&I		M&I		NO OPR		X	NO OPR		M&I		M&I		M&I	
11	7-May	50002/06	50543	M&I		M&I		M&I		M&I		X	M&I		M&I *		M&I *		M&I		X	M&I		M&I		SAT		SAT	
12	8-May	50002/06	50543	SAT FINAL		SAT		SAT		SOLD		X	FIX		C/OFF		ASI		ASI		X	ASI C/ON		NO OPR		NO OPR		NO OPR	
13	9-May	50002/06	X50494	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI GOING C/B			ASI		ASI		ASI		ASI	
14	10-May	50002/06	50494	ASI		ASI		READY TO MATE				X	MATING		MATING		MATING		M&I PLUMB		X	M&I PLUMB		M&I		M&I		M&I	
15	11-May	50002/06	50494	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
16	12-May	50002/06	50494	SAT W/ADJ		SAT		SAT		SAT		X	SAT		SAT SOLD						X								
17	12-May	50002/06	50495									X					50495		ASI C/ON		X	ASI		ASI		NO 3RD SHIFT			
18	14-May	50002/06	50945	ASI NO OPR		ASI		ASI NO OPR		ASI NO OPR		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI	
19	15-May	50002/06	50945	33		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		TROUBLESHOOTING TURN ONS					
20	16-May	50002/06	50945	ASI		ASI		ASI		ASI		X	MAKE READY TO MATE				MATING		MATING		X	M&I		M&I		M&I		M&I	
21	17-May	50002/06	50945	TROUBLESHOOTING		M&I		M&I				X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
22	18-May	50002/06	50945	TROUBLESHOOTING M&I		TROUBLESHOOTING						X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
23	19-May	50002/06	50945	LEAK TEST IN		SAT C/OFF		SAT		SAT		X	SAT								X								
24	19-May	50002/06	31764									X					31764 RAR C/ON				X	NO OPR		SHUT DOWN 0230					
25	21-May	50002/06	30169	ASI C/ON		PLUMBING		ASI		ASI		X	ASI NO OPR		ASI NO OPR		ASI NO OPR		ASI NO OPR		X	ASI NO OPR		ASI NO OPR		ASI		ASI	
26	22-May	50002/06	30169	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
27	23-May	50002/06	30169	ASI NO OPR		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
28	24-May	50002/06	30169	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
29	25-May	50002/06	30169	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
30	26-May	50002/06	30169	ASI NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR	
31	27-May	50002/06	30169	ASI NO OPR		ASI		ASI		ASI		X	ASI NO OPR		ASI NO OPR		ASI NO OPR		ASI NO OPR		X	ASI NO OPR		SHUT DOWN 0230				>	
32	27-May	50002/06	30169	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI	
33	30-May	50002/06	30169	35		NO OPR		NO OPR		NO OPR		X	ASI		ASI		OPR 066		ASI		X	ASI		ASI		ASI		ASI	
34	31-May	50002/06	30169	ASI		ASI		ASI		ASI		X	ASI		ASI		SOLD SUPER FLUSH				X	MATING		MATING		M&I		M&I	
35	1-May	50002/07	51936	SOLD		OPEN		C/ON		RAR		X									X								
36	1-May	50002/07	32205									X	32205		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
37	2-May	50002/07	32205	RAR		RAR		RAR & C/ON				X	RAR C/ON		NO OPR		NO OPR		RAR C/ON		X								
38	2-May	50002/07	50543									X									X	50543		ASI NO OPR		NO OPR		NO OPR	
39	3-May	50002/07	32205	RAR		RAR		RAR		OPR 66		X	RAR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
40	4-May	50002/07	32205	RAR		OPR 66		OPR 66		AWAITING W		X	RAR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
41	5-May	50002/07	32205	OPR 66		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
42	6-May	50002/07	32205	M&I		M&I		M&I		SAT		X	SAT		SAT		SAT		SOLD		X	SAT C/OFF		OPEN					
43	6-May	50002/07	32176									X									X					32176 C/ON		NO OPR	
44	7-May	50002/07	32176	C/ON		ASI C/ON		ASI		ASI		X	ASI		ASI		ASI		ASI *		X	ASI		ASI		ASI		ASI	
45	8-May	50002/07	32176	REPLACING DUMP VALVES				INSTALLING WORK COVER				X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI	
46	9-May	50002/07	32176	ASI		ASI		ASI SOLD		AWAITING G		X	AW GG ASI SOLD				>		>		X	ASI SOLD		AWAITING GG NO OPR				NO OPR	
47	10-May	50002/07	32176	AWAITING G		>		AWAITING G		>		X	NO OPR AW G		NO OPR		NO OPR		NO OPR		X	ASI SOLD AW GG				>		>	
48	11-May	50002/07	32176	C/OFF TO LOCATION								X	RAR PLUMB		RAR PLUMB		NO OPR		RAR PLUMB NO OPR										

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
49	11-May	50002/07	51369			51368 C/ON		FLUSH		HOOKING UP		X									X	RAR PLUMBING		NO OPR		NO OPR		NO OPR	
50	12-May	50002/07	51368	RAR C/ON		NO OPR		NO OPR		RAR C/ON		X	RAR PLUMB		RAR NO OPR		RAR PLUMB		RAR		X	RAR		NEED RENEW		RAR SOLD			
51	14-May	50002/07	51368	AWAITING WRITE UP NO OPR						NO OPR		X	RAR REMATE		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
52	15-May	50002/07	30152	HOOKING UP		ASI C/ON		HOOKING UP		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		>		ASI NO OPR		>	
53	16-May	50002/07	30152	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	TROUBLESHOOTING				ASI		ASI	
54	17-May	50002/07	30152	ASI		TROUBLESHOOTING				ASI		X	ASI		MATING		REJECT		C/OFF		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
55	18-May	50002/07	31625	ASI C/ON		REMOVED 30152		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI NO OPR		NO OPR	
56	19-May	50002/07	31625	ASI NO OPR		NO OPR		ASI NO OPR		NO OPR		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		SHUT DOWN		0230		>	
57	21-May	50002/07	31625	ASI		ASI		T/S ASI		T/S ASI		X	ASI NO OPR		ASI NO OPR		ASI NO OPR		ASI NO OPR		X	ASI NO OPR		ASI NO OPR		ASI		ASI	
58	22-May	50002/07	31625	ASI NO OPR		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		ASI		ASI		ASI	
59	23-May	50002/07	31625	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		ASI		ASI		ASI	
60	24-May	50002/07	31625	MATING M&I		M&I NO OPR		M&I NO OPR		M&I NO OPR		X	CONT TO PLU		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
61	25-May	50002/07	31625	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
62	26-May	50002/07	31625	SAT		SAT		SAT		SAT		X	SAT		SAT		SAT		SAT		X	FK60SAT		SOLD SAT C/OFF					
63	26-May	50002/07	30708									X									X					30708 ASI C/ON			
64	27-May	50002/07	30708	ASI		OPR		ASI NO OPR		ASI		X	ASI NO OPR		ASI		ASI		ASI		X	ASI		SHUT DOWN		0230		>	
65	27-May	50002/07	30708	ASI C/ON		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI	
66	30-May	50002/07	30708	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		NO OPR		NO OPR		X	ASI NO OPR		ASI NO OPR		ASI		ASI	
67	31-May	50002/07	30708	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI NO OPR		ASI NO OPR		ASI	
68	1-May	50002/08	50815	SAT		SAT		SAT		SAT		X	EK 50		SOLD		52007		ASI C/ON		X	NO OPR		NO OPR		NO OPR		NO OPR	
69	2-May	50002/08	52007	ASI C/ON		ASI C/ON		ASI		ASI		X	ASI		NO OPR		ASI		ASI		X	ASI		ASI		ASI		NO OPR	
70	3-May	50002/08	52007	HA ROSANS REPLACED				ASI		ASI		X	ASI		NO OPR		ASI		ASI		X	ASI		ASI		ASI		ASI	
71	4-May	50002/08	52007	ASI				ASI		D/B SPOT CH		X	ASI		NO OPR		NO OPR		ASI NO OPR		X	ASI		ASI		ASI		ASI	
72	5-May	50002/08	52007	ASI				ASI		ASI		X	ASI		NO OPR		ASI		ASI		X	ASI		ASI		ASI		ASI	
73	6-May	50002/08	52007	ASI				ASI		ASI		X	ASI		ASI		ASI		ASI		X	NO OPR		ASI		ASI		ASI	
74	7-May	50002/08	52007	READY TO MA				MATING		HOOKING UP		X	M&I		M&I		M&I		M&I		X	NO OPR		NO OPR		NO OPR		NO OPR	
75	8-May	50002/08	52007	M&I		M		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
76	9-May	50002/08	52007	PACKING CO		M		SAT		SAT		X	SAT		SAT		SAT		LEAKING PUM		X	SAT		SAT SOLD		C/OFF		NO OPR	
77	10-May	50002/08	31532							REJECT C/OF		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR RAR C/OFF				>		>	
78	11-May	50002/08	31532	C/OFF								X									X								
79	11-May	50002/08	30073			30073		ASI C/ON		ASI C/ON		X	ASI C/ON		ASI C/ON		NO OPR				X	TROUBLESHOOTING				LEAVE FOR 1ST SHIFT			
80	11-May	50002/08	51638									X							51638		X	TROUBLESHOOTING				LEAVE FOR 1ST SHIFT			
81	12-May	50002/08	51688	SAT		T/S		51639 MOVED TO 2-17				X	ASI NO OPR C/ON				ASI		ASI		X	ASI		ASI		NO 3RD SHIFT			
82	14-May	50002/08	30073	ASI C/ON NO OPR				NO OPR		ASI C/ON		X	ASI NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		ASI NO OPR		NO OPR		NO OPR	
83	15-May	50002/08	30073	MINI FLUSHING				TRAINING		HOOKING UP		X	ASI NO OPR		NO OPR		NO OPR		ASI NO OPR		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
84	16-May	50002/08	30073	PLUMBING FOR ASI				ASI		ASI		X	ASI		ASI		ASI		ASI NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
85	17-May	50002/08	30073	ASI		ASI		TROUBLESHOOTING				X	ASI		ASI		ASI		ASI		X	ASI		NO OPR		NO OPR		NO OPR	
86	18-May	50002/08	30073	ASI		ASI		ASI		ASD		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI NO OPR		ASI NO OPR	
87	19-May	50002/08	30073	ASI NO OPR		NO OPR		NO OPR		ASI NO OPR		X	ASI		TROUBLESHOOTING SPLITTER						X	ASI NO OPR		SHUT DOWN		0230		>	
88	21-May	50002/08	30073	ASI NO OPR		>		>		>		X	ASI		ASI		ASI		REJECT ASI		X	ASI NO OPR		ASI		ASI		ASI	
89	22-May	50002/08	30073	REJECT								X									X								
90	22-May	50002/08	31764			31764 C/ON		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR C/ON		RAR		RAR		RAR	
91	23-May	50002/08	31764	RAR NO OPR		RAR		RAR		RAR		X	RAR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
92	24-May	50002/08	31764	RAR		RAR		RAR		RAR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR		RAR		RAR		RAR	
93	25-May	50002/08	31764	RAR NO OPR		RAR		RAR		RAR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR NO OPR		RAR		RAR		RAR	
94	26-May	50002/08	31764	RAR NO OPR		NO OPR		RAR		RAR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR NO OPR		RAR		RAR		RAR	
95	27-May	50002/08	31764	RAR NO OPR		RAR		RAR		RAR		X	RAR 066		RAR		RAR		RAR		X	RAR 066		RAR 066		SHUT DOWN		230	
96	27-May	50002/08	31764	RAR OPR 06		RAR		RAR		RAR		X	OPR 066		OPR 066		OPR 066		OPR 066		X	M&I MATRIX		>		>SAT		SAT	

AREA B1 sort

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
97	30-May	50002/09	31764	TROUBLESHOOTING				SAT		MOVED 31764 TO T/S 2-2			NO OPR		NO OPR		NO OPR		NO OPR		X	RAR PLUMB NO OPR				NO OPR		NO OPR	
98	31-May	50002/09	31764	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR	
99	1-May	50002/09	52061	52007 REMATE SOLD				RAR		REJECT RAR		X																	
100	1-May	50002/09	52061	C/ON		ASI		ASI		ASI		X	ASI		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
101	2-May	50002/09	52061	ASI		ASI		ASI		ASI		X	ASI		NO OPR		NO OPR		ASI		X	ASI		NO OPR		ASI		ASI	
102	3-May	50002/09	52061	ASI		ASI		ASI		ASI		X	REJECT C/OF		C/BACK ON		ASI		ASI		X	ASI		ASI		ASI		ASI	
103	4-May	50002/09	52061	ASI		ASI		ASI		ASI		X	ASI		ASI		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
104	5-May	50002/09	52061	ASI		ASI		ASI		ASI		X	ASI		SOLD		NO OPR		C/OFF		X	NO OPR		NO OPR		NO OPR		NO OPR	
105	May	50002/09	51834	ASI		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
106	May	50002/09	51834	C/ON		C/ON		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI	
107	8-May	50002/09	51834	ASI		ASI		ASI		INSALL COVY		X			ASI		ASI		ASI		X	ASI		ASI		ASI		ASI	
108	9-May	50002/09	51834	ASI		ASI		ASI		SOLD AS			EING MATE		BEING MATE		M&I		M&I		X	T/S M&I		M&I NO OPR		M&I		T/S M&I	
109	10-May	50002/09	51834	M&I T/S DOWN PFN				M&I		M&I		X	M&I		&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
110	11-May	50002/09	51834	CHANGING PACKING				M&I		M&I		X	M&I		SAT		SAT		SAT		X	SAT		SOLD C/OFF					
111	11-May	50002/09	50481									X									X					50481 ASI C		NO OPR	
112	12-May	50002/09	50481	ASI C/ON		T/S		T/S		T/S		X	ASI C/ON		ASI		ASI		ASI		X	ASI		A		NO 3RD SHIF			
113	14-May	50002/09	50481	MINI FLUSHING				HOOKING UP		NO OPR		X	ASI C/ON	NO OPR			ASI C/ON		ASI PLUMB		X	ASI PLUMB				ASI		ASI	
114	15-May	50002/09	50481	HOOKING UP		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	A				ASI		ASI	
115	16-May	50002/09	50481	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI NO OP				ASI		ASI	
116	17-May	50002/09	50481	ASI		MATRIX		ASI		ASI		X	ASI		ASI SOLD		READY		TO MATE							OPR		NO OPR	
117	18-May	50002/09	50481	ASI C/ ON		ASI NO OPR		HOOKING UP		CONT. C/B		X	ASI		ASI		ASI		ASI							NO OPR		ASI NO OPR	
118	19-May	50002/09	50481	ASI NO OPR		TURN ON PROBLEMS				ASI		X	ASI		ASI		ASI		ASI							1230		>	
119	21-May	50002/09	50481	ASI NO OPR		ASI NO OPR		ASI		ASI		X	ASI		ASI		ASI		ASI		X	AS				ASI		ASI	
120	22-May	50002/09	50481	ASI		TROUBLESHOOTING				ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR				ASI		ASI	
121	23-May	50002/09	50481	ASI TROUBLESHOOTING				>		>		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
122	24-May	50002/09	50481	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		ASI		ASI		ASI	
123	25-May	50002/09	50481	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		CONT TO MA		X	MATING		MATING		MATING		FLUSH PLUM	
124	26-May	50002/09	50481	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I 066		M&I		M&I		M&I	
125	27-May	50002/09	50481	M&I NO OPR		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		SHUT DOWN 0230				>	
126	27-May	50002/09	50481	M&I		M&I		SAT		SAT		X	SAT		SAT		SAT SOLD		EK50 FLEC CK			SAT GK 30		C/OFF		OPEN			
127	30-May	50002/09	30279	C/ON		NO OPR		NO OPR		NO OPR		X	ASI		ASI		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI	
128	31-May	50002/09	30279	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI	
129	1-May	50002/10	51692	M&I		M&I		M&I		M&I		X	M&I				M&I		M&I		X	M&I		M&I		M&I		M&I	
130	2-May	50002/10	51692	M&I		SAT		SAT		SAT		X	SAT		SOLD		EK50 C/OFF		OPEN		X	OPEN		OPEN		OPEN		OPEN	
131	3-May	50002/10	OPEN	OPEN		FRAME REPAIR				OPEN		X									X	X							
132	3-May	50002/10	51219									X	51219		C/ON		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
133	4 May	50002/10	51219	ASI C/ON		SEARCHING FOR FIXTURES				ASI		X	ASI		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
134	5-May	50002/10	51219	ASI		ASI		ASI		ASI		X	ASI		NO OPR		NO OPR		NO OPR		X	GOING C/B		ASI		ASI		ASI	
135	6-May	50002/10	51219	ASI		ASI		ASI		ASI		X	ASI		ASI						X	ASI		REJECT		NO OPR		NO OPR	
136	7-May	50002/10	51219									X									X								
137	7-May	50002/10		52011 C/ON		C/ON		RAR		RAR		X	RAR		RAR		RAR		RAR		X	NO OPR		NO OPR		NO OPR		NO OPR	
138	8-May	50002/10	52011	DEMATED OPERATION				ASI		ASI		X	ASI		ASI		ASI		ASI		X	PROBLEMS WITH TURN ONS						ASI	
139	9-May	50002/10	52011	ASI		ASI OPR 06		TROUBLESHOOTING				X	ASI		ASI		REPLACING DUMP VALVES				X	ASI NO OPR		T/S		ASI		ASI	
140	10-May	50002/10	52011	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		SOLD FLUSH AND MATE			NEED MACHINIST TO PEPLACE ROSAN							
141	11-May	50002/10	52011	MATING		MATING		HOOKING UP FOR M&I				X	DEMATED LEAKING				M&I PLUMB		M&I		X	M&I NO OPR		M&I		M&I		M&I	
142	12-May	50002/10	52011	M&I		T/S		T/S		T/S OK		X	T/S M&I		M&I		M&I		M&I		X	M&I		M&I		NO 3RD SHIFT			
143	14-May	50002/10	52011	M&I		M&I		TROUBLESHOOTING				X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
144	15-May	50002/10	52011	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		SAT		X	SAT		SAT SOLD C/OFF					

AREA B1 sort

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
145	15-May	50002/10	51959									X									X					51959 C/ON		RAR C/ON	
146	16-May	50002/10	31330	RAR C/ON		OPEN T/S DOWN			T/S PART IN MEC			X	RAR C/ON		RAR C/ON		NO OPR		RAR C/ON		X	RAR C/ON		NO OPR		NO OPR		NO OPR	
147	17-May	50002/10	31330	RAR NO OPR		PLUMB FOR RAR				RAR		X	RAR		RAR		RAR		RAR		X	NO OPR		RAR NO OPR		NO OPR		NO OPR	
148	18-May	50002/10	31330	RAR C/ON		NO OPR		NO OPR		NO OPR		X	RAR		RAR		RAR		RAR		X	RAR		RAR NO OPR		R R NO OPR		HAR NO OPR	
149	19-May	50002/10	31330	RAR RCVV SLOW				RAR		RAR		X	RAR		RAR OP 066		RAR OP 066		RAR OP 066		X	RAR OP 066		SHUT DOWN 0230				>	
150	21-May	50002/10	31330	OPR 066		OP 066		OP 066 COMPLETED				X	OP 066		OP 066		OP 066		OP 066		X	M&I		M&I		M&I		M&I	
151	22-May	50002/10	31330	M&I		M&I		M&I *		M&I		X	M&I *		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
152	23-May	50002/10	31330	M&I		M&I *		M&I		M&I *		X	M&I *		M&I *		M&I		M&I		X	M&I		M&I		M&I		SAT	
153	24-May	50002/10	31330	SAT		SAT		SAT		SAT		X	SAT		FK 50 CK		SOLD C/OFF				X								
154	24-May	50002/10	31016									X							31016 C/ON		X	RAR C/ON		NO OPR		RAR		RAR	
155	25-May	50002/10	31016	RAR C/ON		RAR C/ON		RAR C/ON		RAR C/ON		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR PLUMB		RAR		RAR		RAR	
156	26-May	50002/10	31016	RAR NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		RAR C/ON		X	R NO OPR		RAR		RAR		RAR	
157	27-May	50002/10	31016	RAR NO OPR		RAR		RAR		RAR		X	R NO OPR		RAR		RAR		RAR		X	RAR		SHUT DOWN 0230				>	
158	29-May	50002/10	31016	RAR C/ON		RAR		RAR		RAR		X	CONT TO PLUMB		>		>		RAR		X	RAR		RAR		RAR		RAR	
159	30-May	50002/10	31016	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR COMPLETED		NO OPR		NO OPR		NO OPR		X	RAR OP 066		RAR		RAR		RAR	
160	31-May	50002/10	31016	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
161	1-May	50002/11	50417	ASI C/OFF		ASI C/OFF		ASI C/OFF		C/OFF		X	C/OFF		NO OPR		NO OPR		ASI C/OFF		X	ASI C/OFF		C/OFF					
162	1-May	50002/11	51103									X									X					51103		READY TO M	
163	2-May	50002/11	51103	MAKING READY TO MATE				M&I C/ON		M&I * C/ON		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
164	3-May	50002/11	51103	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
165	4-May	50002/11	51103	TOXICOLOGY CLASS				M&I		REJECT C/OF		X	>		NO OPR		NO OPR		REJECT C/OF		X	NO OPR		NO OPR		NO OPR		NO OPR	
166	5-May	50002/11	51103	REJECT NEEDLE REMOVED		NO OPR				NO OPR		X	1ST SHIFT REJECT NED TO REMOVE				NO OPR				X	NO OPR		T/S DUE CALIBRATION				>	
167	6-May	50002/11	51103	NEED TO REMOVE REJECT		NO OPR				NO OPR		X	NO OPR C/OF		REJECT		NO OPR		NO OPR		X	DUE CALIBRATION				>		>	
168	7-May	50002/11	51103	C/OFF		DUE CALIBRATION		>		>		X	>		>		>		>		X	>		>		>		>	
169	8-May	50002/11		CALIBRATING				>		>		X	OPEN		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN	
170	9-May	50002/11	CALIBRATION			>		>		>		X	CALIBRATIO		>		>		>		X	CALIBRATIO		>		>		>	
171	10-May	50002/11	CALIBRATON			>		>		>		X	CALIBRATIO		>		>		>		X	CALIBRATIO		>		>		>	
172	11-May	50002/11	CALIBRATION CORRELATION CONTR					31836		CORRELATIO		X	>		3		CORRELATION NO OPR				X	CORRELATION NO OPR				NO OPR		NO OPR	
173	12-May	50002/11		CORRELATION CONTROL				>		>		X									X								
174	12-May	50002/11	31836									X	31836		NO OPR		CORRELATION CONTROL				X	>		>		>		>	
175	14-May	50002/11	31836	CORRELATIO		>		>		>		X	CORRELATIO		T/S		T/S		CORRELAT		X	CORRELATIO		REVIEW CORRELATION CO		REMOVED			
176	15-May	50002/11	31491	MINI FLUSHING				TRAINING & HOOKING UP				X	ASI C/ON		ASI ON		ASI NO OPR		ASI		X	ASI		ASI		ASI		ASI	
177	16-May	50002/11	31491	ASI		ASI		ASI		ADJUSTING		X	ASI NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
178	17-May	50002/11	31491	ASI		ASI		ASI		ASI NO OPR		X	ASI NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
179	18-May	50002/11	31491	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI NO OPR		NO OPR		NO OPR	
180	19-May	50002/11	31491	ASO NO OPR		NO OPR		NO OPR		ASI NO OPR		X	TROUBLESHOOTING TURN ONS						ASI		X	ASI		SHUT DOWN 0230				>	
181	21-May	50002/11	31491	ASI NO OPR		ASI		ASI		ASI		X	ASI NO OPR		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI	
182	22-May	50002/11	31491	ASI NO OPR		>		>		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
183	23-May	50002/11	31491	ASI NO OPR		RAR NO OPR		ASI		ASI		X	NO OPR		>		>		>		X	ASI NO OPR				>		>	
184	24-May	50002/11	31491	ASI NO OPR		ASI NO OPR		ASI NO OPR		ASI NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
185	25-May	50002/11	31491	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
186	26-May	50002/11	31491	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
187	27-May	50002/11	31491	ASI NO OPR		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		SHUT DOWN 0230				>	
188	29-May	50002/11	31491	ASI		ASI		ASI		ASI		X	NO OPR		REJECT C/OF		>				X								
189	30-May	50002/11	51103	NO OPR		NO OPR		NO OPR		NO OPR		X	CONT TO PLUMB				M&I		M&I					M&I		M&I		M&I	
190	31-May	50002/11	51103	M&I		M&I		M		M&I		X	OPR 066		M&I		M&I		M&I		X	M&I NO OPR		M&I		M&I		M&I	
191	1-May	50002/12	52276	ASI NO OPR		ASI		A		ASI		X	ASI *		NO OPR		ASI		ASI		X	ASI		ASI		ASI		ASI	
192	2-May	50002/12	52276	ASI		ASI *		Si		ASI *		X	ASI *		ASI		ASI *		ASI		X	READY TO MATE				MATING		M&I	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
193	3-May	50002/12	52276	NO OPR		HOOKING UP		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
194	4-May	50002/12	52276	M&I		M&I *		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		SAT		SAT	
195	5-May	50002/12	52276	SAT		SAT		SOLD		OPEN		X	OPEN		NO OPR		NO OPR		NO OPR		X	T/S DUE CALIBRATION							
196	6-May	50002/12		DUE CALIBRATION				>		>		X	>		>		>		>		X	>		>		>		>	
197	7-May	50002/12		DUE CALIBRATION				OPEN		DUE CALIBR		X	>		>		>		>		X	>		>		>		>	
198	8-May	50002/12		CALIBRATING				>		>		X	OPEN		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN	
199	9-May	50002/12	CALIBRATION			>		>		>		X	CALIBRATIO		>		>		>		X	CALIBRATIO		>		>		>	
200	10-May	50002/12	CALIBRATION			>		>		>		X	CALIBRATIO		>		>		>		X	CALIBRATIO		>		>		>	
201	11-May	50002/12	CALIBRATION			>		>		>		X	>		>		CALIBRATIO		>		X	>		>		>		>	
202	12-May	50002/12		T/S DUE CALIBRATION				>		>		X	CALIBRATIO		>		>		>		X	>		>		NO 3RD SHIFT			
203	14-May	50002/12	CALIBRATION									X									X								
204	14-May	50002/12	31804			31804 C/ON		HOOKING UP		HOOKING UP		X	PLUMBING		PLUMBING		PLUMBING		PLUMBING		X	CORRELATIO		>		>		T/S CORREL	
205	15-May	50002/12	31804	CORRELATION				CORRELATIO		>		X	CORRELATION		C/OFF						X								
206	15-May	50002/12	30360									X					30360 ASI C/ON				X	ASI NO OPR							
207	15-May	50002/12	50136									X									X			50136 M&I PLUMBING				M&I	
208	16-May	50002/12	50136	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	T/S M&I		M&I		M&I		M&I	
209	17-May	50002/12	50136	M&I T/S DOWN				M&I		M&I		X	SAT		SAT		SAT		SAT		X	SAT		REPLACED M/V				SAT MATRIX	
210	18-May	50002/12	50136	M&I PLATE SCREW ADJ				MATRIX		MATRIX		X	MATRIX		MATRIX		SAT		SAT		X	SAT C/K		SAT					
211	18-May	50002/12	30777									X									X					30777 C		RAR C/ON	
212	19-May	50002/12	30777	OPEN		RAR NO OPR		NO OPR		PLUMB		X	RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR		X	RAR		SHUT DOWN 0230				>	
213	21-May	50002/12	30777	RAR PLUMBING				RAR 1		RAR 2		X	RAR 2 NO OP		RAR		RAR		RAR		X	RAR		RAR 3		RAR 17		RAR	
214	22-May	50002/12	30777	RAR COMPLETE				M&I		M&I		X	M&I		M&I *		M&I		M&I		X	M&I		M&I		M&I			
215	23-May	50002/12	30777	M&I		M&I		M&I		M&I		X	M&I *		M&I *		M&I *		M&I *		X	TROUBLESHOOTING				DEMATE TO		DEMATING	
216	24-May	50002/12	30777	TROUBLESHOOTING				>		>		X	OPR 066		OPR 066		OPR 066		OPR 066		X	ASI OPR 066		ASI		ASI		ASI	
217	25-May	50002/12	30777	ASI		ASI NO OPR		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
218	26-May	50002/12	30777	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
219	27-May	50002/12	30777	ASI NO OPR		ASI		ASI		ASI		X	ASI NO OPR		ASI		ASI		ASI		X	ASI		SHUT DOWN 0230				>	
220	29-May	50002/12	51103									X							51103		X	M&I PLUMBING				M&I		M&I	
221	30-May	50002/12	30777	TROUBLESHOOTING				NO OPR		NO OPR		X	OPR 066		OPR 066		REJECT C/OFF		OPEN		X								
222	30-May	50002/12	30371									X									X	30371		RAR C/ON NO OPR				RAR	
223	31-May	50002/12	30371	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	SAT		SAT		SAT		SAT SR CK	
224	1-May	50002/13	33659	CDR		CDR		CDR		CDR		X	CDR		C/OFF						X								
225	1-May	50002/13	31345									X					31345		RAR		X	RAR		RAR		NO OPR		NO OPR	
226	2-May	50002/13	31345	CDR C/ON		NOTE C/ON		C/ON *		C/ON *		X	C/ON		NO OPR		NO OPR		C/ON CDR		X	NO OPR		NO OPR		NO OPR		NO OPR	
227	3-May	50002/13	31345	CDR HOOKING UP				CDR		OPR 66		X	OPR 66		RAR SAT		RAR SAT		RAR SAT		X	RAR		RAR		RAR		RAR	
228	4-May	50002/13	31345	M&I		M&I		M&I *		M&I		X	M&I *		M&I *		M&I *		M&I *		X	M&I		M&I		M&I		M&I	
229	5-May	50002/13	31345	PRESETTING RCVVs				M&I		REJECTED C/OFF					NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR,	
230	6-May	50002/13	31345	NEED TO REMOVE PER				NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	T/S DUE CALIBRATION				>		>	
231	7-May	50002/13	31345	C/OFF		C/OFF		CALIBRATIO		>		X	>		>		>		>		X	>		>		>		>	
232	8-May	50002/13		CALIBRATING				>		>		X	OPEN		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN	
233	9-May	50002/13	CALIBRATION			>		>		>		X	CALIBRATIO		>		>		>		X	CALIBRATIO		>		>		>	
234	10-May	50002/13	CALIBRATION			>		>		>		X	CALIBRATIO		>		>		>		X	CALIBRATIO		>		>		>	
235	11-May	50002/13	CALIBRATION			>		>		>		X	>		>		CALIBRATIO		>		X	>		>		>		>	
236	12-May	50002/13		T/S DUE CALIBRATION				>		>		X	CALIBRATIO		>		>		>		X	>		>		NO 3RD SHIFT			
237	14-May	50002/13	CALIBRATION			>		>		>		X	OPEN		>		>		>		X	OPEN		AW CORRELATON CONTROL					
238	14-May	50002/13	31836									X									X					31836		PLUMBING	
239	15-May	50002/13	31836	CORRELATION HOOK UP				SEARCHING FOR FIXTURES				X	CORRELATIO		>		CORRELATIO		>		X	T/S CORRELATION				ASI NO OPR		NO OPR	
240	16-May	50002/13	31836	T/S DOWN CORRELATION CONTROL						T/S DOWN		X	T/S DOWN		T/S NO OPR		NO OPR		CORREL NO C		X	CORREL. C/ON				RAR C/ON		RAR C/ON	

AREA B1 sort

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
241	17-May	50002/13	31251	RAR		RAR		RAR		RAR		X	RAR NO OPR		NO OPR		NO OPR		NO OPR		X								
242	17-May	50002/13	31846									Y									X	31846	RAR	NO OPR		RAR NO OPR		RAR NO OPR	
243	18-May	50002/13	31251	RAR NO OPR		NO OPR		T/S DOWN RAR				X	NO OPR		NO OPR		RAR NO OPR		RAR NO OPR		X	RAR NO OPR		NO OPR		NO OPR		NO OPR	
244	19-May	50002/13	31251	RAR RCVV S		RAR COMPLE		NEED TO REPLACE				X	M&I		M&I OP 066		M&I		M&I		X	M&I		SHUT DOWN 0230		>		>	
245	21-May	50002/13	31251	M&I		M&I		M&I		M&I •		X	M&I		M&I		M&I		M&I		X	M&I		REPLACING DUMP VALVE		>		>	
246	22-May	50002/13	31251	M&I		SAT		SAT		SAT		X	SAT		SAT		SAT		SAT		X	SOLD & REMOVED							
247	22-May	50002/13	32942									X									X			32942		RAR C/ON		RAR	
248	23-May	50002/13	32942	RAR C/ON		RAR		RAR		RAR		X	CONT TO PLUMB				SAT		SAT		X	SAT		SAT		OP 066		SAT OP 066	
249	24-May	50002/13	32942	TROUBLESHO		SAT		SAT		SAT		X	SAT		SAT		SAT		SAT		X	SAT		SAT		SAT		SAT SOLD C	
250	25-May	50002/13	30258	ASI C/ON		ASI NO OPR		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR PLUMB				NO OPR		NO OPR	
251	26-May	50002/13	30258	ASI C/ON		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		ASI C/ON		X	ASI C/ON		ASI		ASI		ASI	
252	27-May	50002/13	30258	ASI NO OPR		C/ON		ASI		ASI		X	ASI NO OPR		ASI NO OPR		ASI		ASI		X	ASI		SHUT DOWN 0230		>		>	
253	29-May	50002/13	30777	ASI REJECT								X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
254	30-May	50002/13	30258	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		ASI		ASI		ASI	
255	31-May	50002/13	30258	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		ASI		X	ASI		ASI		ASI		ASI	
256	1-May	50002/14	50616	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
257	2-May	50002/14	50616	TOXICOLOGY	CLASS			M&I •		M&I •		X	M&I •		M&I		M&I		M&I COMPLE		X	SAT		SAT		SAT		SAT	
258	3-May	50002/14	50616	SAT		SAT		SAT		SOLD		X	C/OFF		C/OFF		REMOVED		ASI C/ON		X								
259	3-May	50002/14	33059																		X	33059		ASI C/ON		NO OPR		NO OPR	
260	4-May	50002/14	33059	ASI C/ON		SEARCHING FOR FIXTURES				NO OPR		X	ASI C/ON		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR	
261	5-May	50002/14	33059	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
262	6-May	50002/14	33059	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
263	7-May	50002/14	33059	ASI		ASI		ASI •		ASI •		X	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR			
264	8-May	50002/14	33059	C/OFF REJECT								X																	
265	8-May	50002/14	51048			51048 C/ON		HOOKING UP		RAR		X	RAR		RAR		RAR		RAR		X	RAR		DEMATING FO OP 66				T/S	
266	9-May	50002/14	51048	ASI OPR 066		REMOVING		ASI C/ON		C/ON		X	ASI C/ON		ASI C/ON		ASI		ASI		X	ASI OPR 066		NO OPR		NO OPR		NO OPR	
267	10-May	50002/14	51048	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		ASI		ASI		ASI	
268	11-May	50002/14	51048	TROUBLESHOOTING				SAFETY WIRE SUPER FLUS				X	MATING		MATING		M&I PLUMBING				X	M&I		M&I		M&I		M&I	
269	12-May	50002/14	51048	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		NO 3RD SHIFT			
270	14-May	50002/14	51048	M&I		M&I		T/S DOWN		SAT		X	SAT T/S DOV		SAT		SAT		SAT		X	SAT		SAT		SAT COM		SOLD C/OFF	
271	15-May	50002/14	51048									X									X								
272	15-May	50002/14	30255	30255 C/ON		HOOKING UP		ASI		ASI		X	ASI		ASI		ASI NO OPR		ASI		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
273	16-May	50002/14	30255	ASI		T/S DOWN		ASI		T/S DOWN		X	T/S DOWN		NO OPR		NO OPR		T/S DOWN		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
274	17-May	50002/14	30255	ASI		ASI		ASI		ASI		X	ASI NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI NO OPR		ASI NO OPR		NO OPR	
275	18-May	50002/14	30255	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI NO OPR		ASI NO OPR		NO OPR	
276	19-May	50002/14	30255	ASI NO OPR		ASI		ASI		ASI/SOLD		X	MATING		PLUMBING		M&I		M&I		X	M&I		SHUT DOWN 0230				>	
277	21-May	50002/14	30255	M&I		M&I		M&I		M&I •		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
278	22-May	50002/14	30255	M&I		M&I		SAT		SAT		X	SAT		SAT		SAT		SOLD		X	DO NOT REMOVE				OCM EAM TO CK SEQ			
279	23-May	50002/14	30255	SAT		SAT		TROUBLESHOOTING TURN				X	NO OPR		NO OPR		NO OPR		NO OPR		X	SAT HOLD FOR FIRST		>				>	
280	24-May	50002/14	30255	TROUBLESHOOTING				>		>		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		HOLD FOR 1ST SHIFT				>	
281	25-May	50002/14	30255	TROUBLESHOOTING				30255 REJECT				X									X								
282	26-May	50002/14	51590	M&I		M&I		M&I		M&I		X	M&I		M&I		SAT		SAT		X	SAT EK 50		SAT SOLD C/OFF					
283	26-May	50002/14	31616									X									X					31616		ASI C/ON	
284	27-May	50002/14	31616	ASI NO OPR		ASI NO OPR		ASI NO OPR		ASI NO OPR		X	ASI NO OPR		ASI NO OPR		ASI		ASI		X	ASI		SHUT DOWN 0230				>	
285	29-May	50002/14	30258	ASI C/ON		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI		ASI		ASI	
286	30-May	50002/14	31616	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
287	31-May	50002/14	31616	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI NO OPR		ASI NO OPR		ASI NO OPR	
288	1-May	50002/15	52322	M&I		SAT		SAT		SAT		X	SAT		EK 50		REJECT REMOVED				X								
	25-MAY	/14	51590							M&I C/ON			C/OFF		PLUMB		M&I		M&I					M&I		M&I		M I		M I	

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
289	1-May	50002/15	51996									X							51996		X	NO OPR		NO OPR		NO OPR		NO OPR	
290	2-May	50002/15	51996	HOOKING UP		ASI C/ON		ASI		ASI		X	ASI		NO OPR		NO OPR		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR	
291	3-May	50002/15	51996	ASI NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
292	4-May	50002/15	51996	T/S DOWN		ASI		ASI *		ASI		X	ASI *		ASI *		ASI *		ASI		X	ASI		ASI		SPLITTER PROBLEMS			
293	5-May	50002/15	51996	ASI		NO OPR		NO OPR		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI	
294	6-May	50002/15	51996	GOING D/B		REJECTED		>		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
[illegible]	7-May	50002/15	51996	TROUBLESHOOTING				REJECT				X									X								
296	7-May	50002/15	50696							50696 C/ON		X	NO OPR		ASI C/ON		ASI C/ON		ASI C/ON		X	NO OPR		NO OPR		NO OPR		NO OPR	
297	8-May	50002/15	50696	SEARCH FOR FIXTURES TO HOOK UP						ASI		X	ASI		ASI *		ASI		ASI		X	ASI		ASI		ASI		T/S	
[illegible]	9-May	50002/15	50696	ASI OPR 066		REPLACING DOG BONES				REPLACING		X	ASI		ASI		REJECT REMOVED				X	OPEN		OPEN					
299	9-May	50002/15	30213									X									X					30213 C/ON		NO OPR	
300	10-May	50002/15	30713	HOOKING UP		ASI NO OPR		ASI NO OPR		ASI NO OPR		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
301	11-May	50002/15	30713	ASI		T/S/ DOWN		ASI		ASI		X	ASI		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
302	12-May	50002/15	30713	ASI NO OPR		NO OPR		NO OPR		ASI NO OPR		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		ASI NO OPR		NO 3RD SHIFT			
303	14-May	50002/15	30713	ASI NO OPR		ASI		TROUBLESHOOTING				X	TROUBLESHOOTING				ASI		ASI		X	ASI NO OPR		ASI NO OPR		NO OPR		NO OPR	
304	15-May	50002/15	30713	29		30		32		33		X	ASI		ASI		ASI		ASI		X	ASI		ASI		WIRE & SUPER FLUSH			
305	16-May	50002/15	30713	SOLD FLUSHING CONTROL				MATING TO M&I				X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
306	17-May	50002/15	30713	M&I		M&I		ADJUSTING IN-23				X	TROUBLESHOOTING				M&I		M&I		X	M&I		M&I		M&I		M&I	
307	18-May	50002/15	30713	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		SAT		X	SAT		SAT		SAT		SAT	
308	19-May	50002/15	30713	SAT		SAT		EEC TRIM PROBLEM				X	REPLACED ROSAN AGAIN				SAT		SAT		X	SAT		SAT COMPLE		SHUTDOWN 0230			
[illegible]	21-May	50002/15	30713	SAT ELEC CK C/OFF				OPEN		>		X	RAR		RAR		RAR		RAR		X	RAR		RAR		RAR		RAR	
310	22-May	50002/15	32581	TDR		TDR		TDR		TDR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR		RAR		COMPLETED		>	
311	23-May	50002/15	32581	MRT DEMATE		DEMATE		TROUBLESHOOTING ASI				X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI OPR 066		>		>		>	
[illegible]	24-May	50002/15	32581	TROUBLESHOOTING				REJECT C/OFF				X									X								
313	24-May	50002/15	50694							50694 C/ON		X	CONT TO PUR		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
314	25-May	50002/15	50694	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		SAT		SAT		SAT	
[illegible]	26-May	50002/15	50694	SAT		SOLD NEED REMOVE				C/OFF		X									X								
316	26-May	50002/15	32758									X	32758 C/O		NO OPR		NO OPR		CONT TO PU		X	NO OPR RAR		C/ON		NO OPR		NO OPR	
317	27-May	50002/15	32758	RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR		X	RAR NO OPR		RAR		RAR		RAR		X	RAR		SHUT DOWN		0230		>	
318	28-May	50002/15	32758	RAR		RAR		RAR		>RAR COMPL		X	AWAITING WRITEUP				NO OPR		NO OPR		X	RAR OPR 06		RAR		RAR		RAR	
319	30-May	50002/15	32758	M&I		M&I		M&I		M&I		X	SAT		SAT		SAT		SAT		X	SAT		SAT		SAT EK 50		REPLACE INC	
[illegible]	31-May	50002/15	32758	TROUBLESHOOTING								X	OPR 066		OPR 066		C/OFF		CONT TO RE		X								
[illegible]	31-May	50002/15	30152									X									X	30152		ASI C/ON		ASI C/ON		ASI C/ON	
322	1-May	50002/16	31491	ASI		ASI *		ASI *		ASI *		X	ASI *		ASI *		ASI		ASI		X	ASI		ASI		ASI		ASI	
323	2-May	50002/16	31491	ASI SPOT CHECK				ASI *		ASI		X	ASI		NO OPR		NO OPR		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR	
324	3-May	50002/16	31491	ASI		ASI		ASI		ASI		X	ASI		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
[illegible]	4-May	50002/16	31491	ASI C/OFF		SM10 C/ON		NO OPR		NO OPR		X									X	X							
326	4-May	50002/16	51710									X	51710		RAR		RAR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
327	5-May	50002/16	51710	RAR		RAR		NO OPR		NO OPR		X	RAR C/ON		NO OPR		NO OPR		NO OPR		X	RAR C/ON		>		>		>	
328	6-May	50002/16	51710	RAR		NO OPR		NO OPR		RAR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
329	7-May	50002/16	51710	RAR		RAR		RAR		RAR		X	RAR		RAR		RAR		RAR		X	RAR		NO OPR		NO OPR		NO OPR	
[illegible]	8-May	50002/16	51710	C/ON		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		NO OPR		NO OPR		T/S	
[illegible]	9-May	50002/16	50574	TROUBLESHOOTING				ASI		LEAKING AS		X	A/W WRITEU		REJECT		C/OFF		C/OFF		X	REJECT C/OF				NO OPR		NO OPR	
332	10-May	50002/16	30124	REJECT R		C/ON RAR		RAR		T/S DOWN		X	RAR		RAR		RAR		RAR COMPLETE			RAR NO OPR		NO OPR		NO OPR		NO OPR	
333	11-May	50002/16	30124	OPR 066		OPR 066		OPR 066		OPR 066 M&		X	RAR OPR 06		NO OPR		NO OPR		NO OPR		X	RAR OPR 06		NO OPR		NO OPR		NO OPR	
[illegible]	12-May	50002/16	30124	OPR 66		DOG BONES 066				OPR 066		X									X								
[illegible]	13-May	50002/16	30126									X	30126		NO OPR RAR		RAR 066		M&I		X	M&I		M&I		NO 3RD SHIFT			
336	14-May	50002/16	30124	M&I		M&I OP 066		TROUBLESHOOTING				X	M&I		M&I		M&I		M&I		X	M&I		LEAKY PACKING REPLACE		SAT			

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
337	15-May	50002/16	30124	SAT W/ADJ		SAT ADD		SAT		SAT		X	SAT		DEMATING TO ASI				ASI OP 066		X	ASI OP 066		ASI		ASI		ASI	
338	16-May	50002/16	30124	ASI		ASI		ASI		ASI		X	ASI		MATING		MATING		MATING		X	MATING		M&I		NO OPR		FLUSH	
339	17-May	50002/16	30124	PLUMB FOR M&I				M&I		M&I		X	M&I		M&I		M&I		M&I		X	PROBLEM ROCKET FIRE				M&I		M&I	
340	18-May	50002/16	30124	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		SAT		SAT	
341	19-May	50002/16	30124	SAT		SAT		SAT		SAT		X	SAT		SAT		SAT SOLD C/OFF				X								
342	19-May	50002/16	31930									X										31930 RAR		X	RAR NO OPR	SHUT DOWN 0230			
343	21-May	50002/16	30569	RAR NO OPR		PLUMBING FOR RAR				RAR		X	RAR		RAR		RAR		RAR		X	RAR NO OPR		RAR		RAR		RAR	
344	22-May	50002/16	30569	RAR		RAR		RAR COMPLETED				X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR 066		RAR		RAR		BACK PRESS	
345	23-May	50002/16	30569	OPR 066		TROUBLESHOOTING ASI		>				X	OPR 066		SAT		SAT *		SAT *		X	SAT		SAT		SAT		SAT	
346	24-May	50002/16	30569	SAT		TO MECH SHOP TO REPLACE ROSANS						X	CONT TO PLU		REJECT C/ON						X								
347	24-May	50002/16	30775									X					30775		CONT TO PLU		X	RAR NO OPR		RAR NO OPR		RAR		RAR	
348	25-May	50002/16	30775	RAR C/ON		RAR		RAR		RAR		X	OPR 066		OPR 066		OPR 066		OPR 066		X	RAR OPR 06		RAR		RAR		RAR	
349	26-May	50002/16	30775	RAR NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR NO OPR				RAR		RAR	
350	27-May	50002/16	30775	RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR		X	RAR NO OPR		RAR		RAR		M&I		X	M&I		M&I				>	
351	29-May	50002/16	30775	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		SAT		X	SAT SERVO LEAKAGE REPLACEMENT						SAT	
352	30-May	50002/16	30775	TROUBLESHOOTING #8		M&I		M&I		M&I		X	SAT		SAT		SAT		SAT		X	SAT		SAT		SAT		SAT	
353	31-May	50002/16	30775	SAT		SAT		SAT		SAT		X	SAT		SAT		OPR 066		SAT		X	MOVED CONTROL TO 0		RAR C/ON				RAR C/ON	
354	1-May	50002/26	52575	ASI C/ON		ASI C/ON		ASI C/ON		ASI MATRIX		X	ASI MATRIX		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
355	2-May	50002/26	52575	ASI		ASI		NOTE		ASI *		X	ASI		NO OPR		NO OPR		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR	
356	3-May	50002/26	52575	ASI		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
357	4-May	50002/26	52575	T/S DOWN		TROUBLESHOOTING				ASI		X	ASI		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		READY TO M	
358	5-May	50002/26	52575	M&I		M&I		M&I		FLUSH-PLUM		X	>		>		M&I		M&I		X	M&I		M&I		M&I		M&I	
359	6-May	50002/26	52575	PRESETTING RCVVs				M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
360	7-May	50002/26	52575	M&I		M&I		M&I		M&I		X	M&I		M&I *		M&I		M&I		X	M&I		M&I		M&I		M&I	
361	8-May	50002/26	52575	MAKING READY FOR 51				M&I *		SAT		X	SAT		SAT		SAT		SAT		X	SAT		SAT		SAT		SOLD C/OFF	
362	9-May	50002/26	52575	SOLD C/OFF								X									X								
363	9-May	50002/26	30908			0030 C/ON INSPECTION				FLUSH		X	OPEN		OPEN		OPEN				X								
364	9-May	50002/26	51213									X							51213		X	MATING		M&I PLUMB		M&I		M&I	
365	10-May	50002/26	51213	M&I		REPLACING DUMP VALVES				M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
366	11-May	50002/26	51213	M&I		M&I		M&I		MAKE READY		X	M&I		M&I		M&I		SAT		X	SAT		SAT PROBLEM TEMP BIAS				SAT	
367	12-May	50002/26	51213	SAT		SAT		SOLD NEED ELEC CK C/OF				X									X								
368	12-May	50002/26	30419									X	30419		SAT SOLD C/		F		ASI C/ON		X	ASI NO OPR		NO OPR		NO 3RD SHIFT			
369	14-May	50002/26	30419	ASI		ASI		ASI		ASI		X	ASI		T/S ASI		ASI		ASI		X	ASI		ASI		ASI		ASI	
370	15-May	50002/26	30419	ASI		NO OPR		ASI		ASI		X	ASI NO OPR		NO OPR		NO OPR		NO OPR		X	SAT CK AJ PROBLEMS				ASI NO OPR		ASI NO OPR	
371	16-May	50002/26	30419	ASI		ASI		ASI		SOLD NEEDS		X	MATING		MATING		MATING		M&I		X	M&I		M&I		M&I		M&I	
372	17-May	50002/26	30419	M&I		TROUBLESHOOTING				OCM T/S		X	T/S M&I		M&I		M&I		M&I		X	PROBLEM W/GOV.				M&I		M&I	
373	18-May	50002/26	30419	M&I		M&I		M&I		M&I		X	M&I		M&I		SAT		SAT		X	SAT		SAT		SAT		REPAIRING I	
374	19-May	50002/26	30419	SAT SOLD								X									X								
375	19-May	50002/26	31918			31918 RAR PUMB				NO OPR		X	PLUMB		RAR C/ON		RAR C/ON		RAR C/ON		X	RAR NO OPR		SHUT DOWN 0230				>	
376	21-May	50002/26	31918	RAR PLUMBING				RAR		RAR		X	RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR		X	RAR		RAR OP 066		RAR		RAR	
377	22-May	50002/26	31918	OP 066 DUMP VALVE REPLACEMENT						M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
378	23-May	50002/26	31918	M&I		M&I		M&I		M&I		X	M&I		M&I		SAT		SAT		X	SAT		SAT		SAT SOLD C/OFF			
379	24-May	50002/26	30806	RAR C/ON *		RAR *		RAR *		RAR *		X	CONT TO PLUMB				CONT TO PLU		PLUMB.		X	RAR NO OPR		RAR		RAR		RAR	
380	25-May	50002/26	30806	RAR		RAR		RAR NO OPR		RAR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR NO OPR		RAR		RAR		RAR	
381	26-May	50002/26	30806	RAR		RAR		RAR		OPR 066		X	NO OPR		NO OPR		NO OPR		RAR OPR 06		X	RAR NO OPR				RAR		RAR	
382	27-May	50002/26	30806	RAR NO OPR		RAR NO OPR		RAR NO OPR		RAR NO OPR		X	RAR OPR 06		RAR		RAR		M&I		X	M&I		M&I				>	
383	29-May	50002/26	30806	M&I		M&I		M&I REJECT		M&I DEMATE		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		ASI NO OPR		ASI NO OPR		ASI NO OPR	
384	30-May	50002/26	30806	NO OPR		NO OPR		NO OPR		NO OPR		X	CONT TO PLUMB				NO OPR		NO OPR		X	ASI NO OPR		ASI NO OPR		ASI NO OPR		ASI NO OPR	

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
385	1-May	50002/27	31830	NO OPR		NO OPR		C/ON NOTE		C/ON		X	CORRELATION		CONTROL		NO OPR		NO OPR		X	NO OPR		C/ON		C/ON		C/ON	
387	2-May	50002/27	31830	MACHINE SHOP				C/ON		C/ON		X	CORRELATION		C/ON		NO OPR		NO OPR		X	A/W M/V		NO OPR		NO OPR		NO OPR	
388	3-May	50002/27	31830	INSTALLING MV				HOOKING UP		HOOKING UP		X	>		PLUMB		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
389	4-May	50002/27	31830	SEARCHING FOR FIXTURES				>		>		X	CORRELATION		CONTROL		28		34		X	CORREL CON		COMPLETED		C/OFF		NO OPR	
390	5-May	50002/27	31830	CORRELATION COMPLETE		NO OPR				NO OPR		X	CORRELATION		CONTROL		NO OPR		NO OPR		X	NO OPR		C/OFF		C/OFF		C/OFF	
391	6-May	50002/27	31830	CORRELATION NEED REVIEW						NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	CORR UNIT C/OFF							
392	6-May	50002/27	50136																							50136		C/ON	
393	7-May	50002/27	50136	FLUSHING		HOOKING UP		RAR		RAR		X	RAR		RAR		RAR		VR		X	NO OPR		RAR		AW REVIEW COMPLETE			
394	8-May	50002/27	50136	DEMATING		>		OP 66		OP 66		X	ASI		ASI		ASI		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
395	9-May	50002/27	50136	CHANING DUMP VALVES				ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI	
396	10-May	50002/27	50136	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI MATRIX		X	NO OPR		NO OPR		NO OPR		NO OPR	
397	11-May	50002/27	50136	ASI		ASI		MATRIX B		MATRIX		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		ASI NO OPR		ASI		ASI	
398	12-May	50002/27	50136	ASI NO OPR		NO OPR		NO OPR		READY TO M		X	NOT READY TO MATE				NEED ROSAN IN AUG MAT				X	>		>		NO 3RD SHIFT			
399	14-May	50002/27	50136	MACHINE SHOP REPLACE				READY TO MATE				X	M&I PLUMBING				M&I PLUMBING				X	M&I		M&I		PFT DIGI REMOVED			
400	15-May	50002/27	50136	M&I T/S		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I							
401	15-May	50002/27	30380									X									X			30380 C/ON		NO OPR		ASI 30380 C	
402	16-May	50002/27	31804	CORRECTION C/OFF								X									X								
403	16-May	50002/27	30885			30885 C/ON		ASI		ASI		X	T/S DOWN		T/S DOWN		T/S DOWN		ASI NO OPR		X	ASI NO OPR		ASI NO OPR		NO OPR		NO OPR	
404	17-May	50002/27	30885	ASI		ASI		ASI NO OPR		ASI NO OPR		X	ASI NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		NO OPR		ASI NO OPR		ASI NO OPR	
405	18-May	50002/27	30885	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
406	19-May	50002/27	30885	ASI		TURN ONS		ASI		ASI SOLD		X	READY TO M		MATING		PLUMBING		M&I		X	M&I		SHUT DOWN		0230		>	
407	21-May	50002/27	30885	M&I		M&I		M&I		M&I *		X	M&I *		M&I *		M&I		M&I		X	M&I		M&I		M&I		M&I	
408	22-May	50002/27	30885	M&I		M&I		M&I		M&I		X	M&I		M&I		SAT		SAT		X	SAT		SAT ADJUSTED				SAT	
409	23-May	50002/27	30885	SAT SOLD		SAT SOLD						X									X								
410	23-May	50002/27	30640					30640 C/ON		RAR		X	RAR		RAR COMPLE		OP 066		M&I		X	M&I		M&I		M&I		M&I	
411	24-May	50002/27	30640	RAR		RAR		RAR		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		SAT		SAT	
412	26-May	50002/27	30640	SAT		SAT		SAT		SAT		X	SAT		EK60 CK		SOLD C/OFF				X								
413	25-May	50002/27	31710									X							31719 C/ON		X	RAR NO OPR		RAR		RAR		RAR	
414	26-May	50002/27	31710	RAR NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		RAR C/ON		X	RAR PLUMBING				RAR		RAR	
415	27-May	50002/27	31710	RAR NO OPR		RAR NO OPR		RAR NO OPR		>		X	RAR NO OPR		RAR		RAR		RAR		X	RAR		SHUT DOWN		0230		>	
416	29-May	50002/27	31719	RAR		RAR		RAR		RAR COMPLETE			OPR 066		OPR 066		OPR 066		OPR 066		X	RAR OPR 06		M&I		M&I		M&I	
417	30-May	50002/27	31719	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
418	31-May	50002/27	31719	SAT		SAT		SAT		SAT		X	SAT		EK 60 COMPLETE						X								
419	31-May	50002/27	52516														52516 C/ON		RAR		X	RAR TDR		RAR TDR		RAR TDR		RAR	
420	1-May	50002/28	31405	M&I		M&I		M&I		M&I		X	M&I		M&I *		M&I		M&I		X	PROBLEM W/BLEEDS		M&I		M&I		M&I	
421	2-May	50002/28	31405	M&I		M&I *		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
422	3-May	50002/28	31405	M&I		M&I		M&I		SAT		X	SAT		SAT		SAT		SAT		X	SAT		SAT		SAT C/OFF		C/OFF	
423	4-May	50002/28	30270	OPEN		RAR C/ON		NO OPR		NO OPR		X	RAR		NO OPR		NO OPR		RAR		X	NO OPR		NO OPR		NO OPR		NO OPR	
424	5-May	50002/28	30270	RAR		RAR		NO OPR		NO OPR		X	RAR		NO OPR		NO OPR		NO OPR		X	C/ON		RAR C/ON		NO OPR		NO OPR	
425	6-May	50002/28	30270	RAR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
426	7-May	50002/28	30270	RAR		HOOKING UP		RAR		RAR		X	RAR		RAR		RAR		RAR		X	RAR		RAR		RAR		RAR	
427	8-May	50002/28	30270	DEMATING		>		OPEN		OP 280		X	ASI		ASI		ASI		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
428	9-May	50002/28	30270	NO OPR		HOOKING UP		C/ON ASI		NEED FIXTUR		X	C/ON ASI		C/ON ASI		C/ON ASI		C/ON ASI		X	NO OPR		NO OPR		NO OPR		NO OPR	
429	10-May	50002/28	30270	ASI NO OPR		HOOKING UP		ASI		ASI		X	ASI MATRIX		ASI MATRIX		ASI		ASI MATRIX		X	NO OPR		NO OPR		NO OPR		NO OPR	
430	11-May	50002/28	30270	ASI	34	MATRIX	44	MATRIX	32	MATRIX 32		X	ASI MATRIX		ASI MATRIX		NO OPR		ASI MATRIX		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
431	12-May	50002/28	30270	ASI MATRIX NO OPR				NO OPR		ASI NO OPR		X	ASI		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO 3RD SHIFT			
432	14-May	50002/28	30270	TROUBLESHOOTING				REJECT		REJECT C/OF		X	C/OFF NO OP		NO OPR		NO OPR		NO OPR		X	REJECT ASI C/OFF				NO OPR		NO OPR	

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	G	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
434	15-May	50002/28	52010									X					52010 ASI C/ON				X	ASI C/ON		ASI NO OPR		NO OPR		ASI NO OPR	
435	16-May	50002/28	52010	PLUMBING FOR ASI				SEARCHING FOR FIXTURES				X	ASI		ASI		ASI				X	ASI NO OPR		ASI NO OPR		NO OPR		NO OPR	
436	17-May	50002/28	52010	ASI NO OPR		ASI		ASI NO OPR		ASI NO OPR		X	ASI MATRIX		NO OPR		NO OPR		NO OPR		X	ASI MATRIX		NO OPR		ASI MATRIX		NO OPR	
437	18-May	50002/28	52010	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
438	19-May	50002/28	52010	ASI NO OPR		NO OPR		NO OPR		ASI MATRIX		X	ASI MATRIX		ASI MATRIX		ASI		ASI SOLD		X	WIRE FLUSH		SHUT DOWN 0230				>	
439	21-May	50002/28	52010	M&I		MATING		MATED FOR M&I				X	NO OPR		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
440	22-May	50002/28	52010	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
441	23-May	50002/28	52010	SAT		SAT		SAT		SAT SOLD		X	CONT TO PLUM C/OFF								X								
442	23-May	50002/28	31063									X					31063 C/ON		CONT TO PLUM		RAR C/ON		>		>		>	
443	24-May	50002/28	31063	RAR OPR 06		RAR		RAR		RAR DEMATE		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR NO OPR		RAR		RAR		RAR	
444	5-May	50002/28	31063	TROUBLESHOOTING				READY TO MATE				X	NO OPR		CONT TO PLUMB				PLUMB		X	M&I		SAT		SAT		SAT	
445	26-May	50002/28	31063	SAT MATRIX		SAT		SAT		SAT		X	SAT		SAT		SAT		SAT		X	SAT PLUM		SAT		SAT EK 50		SAT	
446	27-May	50002/28	31062	SAT SOLD C/OFF				>		>		X	SAT C/OFF								X			SHUT DOWN 0230				>	
447	27-May	50002/28	51946			>		>		>		X	>		51946 C/ON		NO OPR		NO OPR		X	NO OPR		SHUT DOWN 0230				>	
448	29-May	50002/28	51946	ASI C/ON		ASI C/ON		ASI C/ON		ASI C/ON		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI NO OPR		NO OPR		NO OPR		NO OPR	
449	30-May	50002/28	51946	NO OPR		NO OPR		NO OPR		NO OPR		X									X								
450	30-May	50002/28	31764									X	31764		OPR 066		OPR 066		OPR 066		X	M&I		M&I		M&I		M&I	
451	31-May	50002/28	31764	SAT		SAT		SAT		SAT		X	OPR 066		OPR 066		OPR 066		SAT		X	SAT		SAT		SAT		SAT	
452	1-May	50002/29	52068	CDR		CDR		CDR		CDR		X	CDR		NO OPR		NO OPR		CDR		X	RAR NO OPR		RAR NO OPR		NO OPR		NO OPR	
453	2-May	50002/29	52068	RAR NO OPR		CDR		CDR		CDR		X	CDR		NO OPR		NO OPR		CDR		X	RAR NO OPR		NO OPR		NO OPR		RAR	
454	3-May	50002/29	52068	RAR		WAITING WRITE UP		AWAITING QUALITY				X					C/OFF		ASI C/ON		ASI		X							
455	3-May	50002/29	31673																		X	31673		NO OPR		NO OPR		NO OPR	
456	4-May	50002/29	31673	ASI		ASI		ASI *		ASI		X	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR	
457	5-May	50002/29	31673	ASI		ASI		ASI		ASI		X	ASI		ASI		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
458	6-May	50002/29	31673	ASI		ASI		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
459	7-May	50002/29	31673	ASI		ASI		ASI		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
460	8-May	50002/29	31673	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI	
461	9-May	50002/29	31673	ASI		ASI		ASI		ASI		X	ASI		COMPLETED		READY TO MATE				X	MATING		M&I PLUMB		M&I		M&I	
462	10-May	50002/29	31673	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
463	11-May	50002/29	31673	REPLACING PACKING				SAT		SAT		X	SAT		SAT		SAT		SAT		X	SAT C/OFF		OPEN					
464	12-May	50002/29	52068	PLUMB M&I		PLUMB		M&I		M&I		X	M&I NO OPR		M&I		M&I		M&I		X	M&I		M&I		NO 3RD SHIFT			
465	14-May	50002/29	52068	PAV-T/S DOWN				M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I T/S		M&I		M&I		M&I	
466	15-May	50002/29	52068	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	SPLITTER PROBLEMS				M&I		SAT	
467	16-May	50002/29	52068	SAT		SAT T/S DOWN				SAT T/S DOWN			SAT		SAT		SAT		SAT		X	SAT		SAT		EK 50 SAT COMPLETE			
468	17-May	50002/29	52068	SOLD ELECT CK C/OFF				OPEN NO OPR				X									X								
469	17-May	50002/29	30569							30569		X	RAR C/ON		NO OPR		NO OPR		NO OPR		X	RAR NO OPR		NO OPR		NO OPR		NO OPR	
470	18-May	50002/29	30569	RAR NO OPR		NO OPR						X									X								
471	18-May	50002/29	31345					31345 READY TO MATE				X	M&I PLUMB		M&I		DEMATE LEAKING				X	MATING		MATING		M&I		M&I	
472	19-May	50002/29	31345	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		SHUT DOWN 0230				>	
473	21-May	50002/29	31345	M&I		M&I		M&I		M&I *		X	M&I *		M&I		M&I		M&I		X	M&I		M&I		SPLITTER PROBLEMS			
474	22-May	50002/29	31345	M&I		M&I		SAT		SAT		X	SAT		SAT		OP 066		OP 066		X	SAT		SAT		SAT		SAT-	
475	23-May	50002/29	31345	M&I		M&I		M&I		TROUBLESHOOT		X	>		OPR 066		OPR 066		OPR 066		X	SAT		SAT		REJECT SAT C/OFF			
476	24-May	50002/29	31345	C/OFF REJECT								X									X								
477	24-May	50002/29	31782			31782 C/ON		C/ON		C/ON		X	NO OPR		NO OPR		NO OPR		NO OPR		X	RAR		RAR		RAR		RAR	
478	26-May	50002/29	31782	RAR C/ON		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		RAR C/ON		X	RAR		RAR		RAR		RAR	
479	27-May	50002/29	31782	RAR NO OPR		RAR		RAR		RAR		X	RAR OP 066		RAR		RAR				X	RAR NO OPR		SHUT DOWN 0230				>	
480	29-May	50002/29	31782	RAR OPNTZ		CO12		RAR		RAR		X	RAR TZ		CO12		RAR		COMPLETED		NO OPR		X	NEEDSMFS		NO OPR		NO OPR		NO OPR	

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
481	30-May	50002/29	31782	TZ0012 OPR 066				NO OPR		NO OPR		X	OPR 066		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
482	31-May	50002/29	31782	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		SAT	
483	1-May	50004/04	31673									X									X					52068 M&I C/ON			
484	1-May	50004/04	31673	NO OPR		NO OPR		NO OPR		NO OPR		X	7		7		7		7		X	13		14		14		14	
485	2-May	50004/04	31673	NO OPR		NO OPR		NO OPR		NO OPR		X	14		14		14		14		X	14		23		M23		23	
486	3-May	50004/04	31673	14		23		24		25		X	26		27		SOLD		OPEN		X	OPEN		NO OPR		NO OPR		NO OPR	
487	4-May	50004/04		OPEN		>		>		>		X	>		>		>		>		X	>		>		>		>	
488	5-May	50004/04		OPEN		>		>		>		X	>		>		>		>		X	>		>		>		>	
489	6-May	50004/04		OPEN		>		>		>		X	>		>		>		>		X	>		>		>		>	
490	7-May	50004/04		OPEN		>		>		>		X	>		>		>		>		X	>		>		>		>	
491	8-May	50004/04		OPEN		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN		X								
492	8-May	50004/04	50696									X									X	50696		B/S		REJECT			
493	8-May	50004/04	52068									X									X							52068C/ON	
494	9-May	50004/04	52068	B/S NO OPR		NO OPR		NO OPR		NO OPR		X	B/S		NO OPR B/S		NO OPR B/S		NO OPR B/S		X	NO OPR		NO OPR		1		7	
495	10-May	50004/04	52068	NO OPR		NO OPR		NO OPR		NO OPR		X	7		7		7		7		X	10		13		14		18	
496	11-May	50004/04	52068	20		22		26		SOLD C/OFF		X	NO OPR		NO OPR		NO OPR		NO OPR		X	REMOVED 52068 T/S/ OPEN						NO OPR OPEN	
497	12-May	50004/04	OPEN	>		>		>		>		X	>		>		>		>		X	OPEN		>		OPEN		>	
498	14-May	50004/04		OPEN NO OPR		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN		X								
499	14-May	50004/04	51228									X									X	51228 C/ON		NO OPR		NO OPR		B/S	
500	15-May	50004/04	51228	B/S		1		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	5		5		7		7	
501	16-May	50004/04	51228	GG		NO OPR		GG		SOLD OPEN		X	OPEN		NO OPR		OPEN		NO OPR		X								
502	16-May	50004/04	51103									X									X	51103 C/ON		W/O 90137 -302				C/ON	
503	17-May	50004/04	51103	GG NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
504	18-May	50004/04	51103	TROUBLESHOOTING GG				GG		GG		X	17		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		18	
505	19-May	50004/04	51103	GG		NO OPR		NO OPR		NO OPR		X									X								
506	21-May	50004/04	51103	GG		GG		GG		GG		X	19		20		23		27		X	NO OPR		SOLD C/OFF					
507	21-May	50004/04	30662									X									X					30662 C/ON		B/S	
508	22-May	50004/04	30662	B/S		B/S		B/S		B/S		X	NO OPR		NO OPR		NO OPR		NO OPR		X	B/S		B/S		B/S		B/S	
509	23-May	50004/04	30662	B/S		GG B/S		GG B/S		GG B/S		X	NO OPR		NO OPR		NO OPR		NO OPR		X	B/S NO OPR		B/S		B/S		B/S	
510	24-May	50004/04	30662	GG B/S NO O		GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		5		7		7	
511	25-May	50004/04	30662	GG		GG		GG		GG		X	GG		GG		NO OPR		NO OPR		X	CHANGED THE MEETING				>		>	
512	26-May	50004/04	30662	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
513	27-May	50004/04	30662	14		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		SHUT DOWN 0230				>	
514	29-May	50004/04	30662	GG		GG		GG		GG		X	GG		GG		GG		G		X	23		26		SOLD OPEN		NO OPR	
515	30-May	50004/04	52151	NO OPR		NO OPR		C/ON NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR							
516	30-May	50004/04	31345									X									X			31345 C/ON		B/S		NO OPR B/S	
517	31-May	50004/04	31345	GG		GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR		X	10		12		NO OPR		NO OPR	
518	1-May	50004/05	OPEN	NO OPR		NO OPR		OPEN		OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
519	2-May	50004/05	OPEN	NO OPR		NO OPR		NO OPR		NO OPR		X	OPEN		NO OPEN		OPEN		OPEN		X	NO OPR		NO OPR		E		NO OPR	
520	3-May	50004/05		OPEN		OPEN		OPEN		OPEN		X	NO OPR		NO OPR		NO OPR		OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR	
521	4-May	50004/05		OPEN		>		>		>		X	>		>		>		>		X	>		>		>		>	
522	5-May	50004/05		OPEN		>		>		>		X	>		>		>		>		X	>		>		>		>	
523	6-May	50004/05		OPEN		>		>		>		X	>		>		>		>		X	>		>		>		>	
524	7-May	50004/05		OPEN		>		>		>		X	>		>		>		>		X	>		>		>		>	
525	8-May	50004/05		OPEN		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN				X								
526	8-May	50004/05	51238									X									X	51238 IS NEXT				NO OPR		CLOSED	
527	9-May	50004/05	OPEN	OPEN		OPEN		OPEN		OPEN		X									X								
528	9-May	50004/05	51238									X	51238		C/ON		NO OPR C/ON		NO OPR C/ON		X	OPEN		51238 NEXT		NO OPR		NO OPR	

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
528	10-May	50004/05	51238	C/ON	NO OPR	NO OPR		C OPR		C/ON		X	C/ON		NO OPR		NO OPR		NO OPR		X	51238 IS NEXT				>		>	
530	11-May	50004/05	OPEN		OPEN			OPEN		OPEN		X	OPEN		OPEN		OPEN		NO OPR		X	OPEN		NO OPR		NO OPR		NO OPR	
531	12-May	50004/05	OPEN	>		>		>		>		X	>		>		>		>		X	OPEN		>		OPEN		>	
532	14-May	50004/05		OPEN	NO OPR	OPEN		OPEN		OPEN		X	OPEN		OPEN		NO OPR		OPEN		X								
533	14-May	50004/05										X									X	51710 C/ON		>		>		B/S	
534	15-May	50004/05	51710	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
535	16-May	50004/05	51710	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		7		7		7	
536	17-May	50004/05	51710	GG	NO OPR	NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
537	18-May	50004/05	51710	GG	NO OPR	GG		GG		GG		X	GG		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		7	
538	19-May	50004/05	51710	GG		NO OPR		NO OPR		NO OPR		X									X								
539	21-May	50004/05	51710	GG	NO OPR	GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
540	22-May	50004/05	51710	GG		GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
541	23-May	50004/05	51710	NO OPR		GG	NO OPR	GG	NO OPR	GG		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
542	24-May	50004/05	51710	GG	NO OPR	GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
543	25-May	50004/05	51710	GG	NO OPR	GG		GG		GG		X	GG		GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR	
544	26-May	50004/05	51710	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
545	27-May	50004/05	51710	8		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		SHUT DOWN 0230				>	
546	29-May	50004/05	51710	GG		GG		GG		GG		X	GG		GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR	
547	30-May	50004/05	51710	NO OPR		GG		GG		GG		X	GG		GG		GG		GG		X	23		T/S DOWN		24		24	
548	31-May	50004/05	51710	GG		GG		GG		GG		X	GG		GG		GG		GG		X	26		SOLD OFF					
549	31-May	50004/05	31668									X									X					31668 C/ON		B/S	
550	1-May	50004/06	OPEN	NO OPR		NO OPR		NO OPR		OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR		X	OPEN							
551	1-May	50004/06	52006									X									X	52006		C/ON		B/S		B/S	
552	2-May	50004/06	52006	B/S		NO OPR		NO OPR		NO OPR		X	B/S		NO OPR		NO OPR		B/S		X	B/S		B/S		E		NO OPR	
553	3-May	50004/06	52006	B/S NO OPR		NO OPR		NO OPR		NO OPR		X	B/S NO OPR		NO OPR		NO OPR		B/S		X	NO OPR		NO OPR		NO OPR		NO OPR	
554	4-May	50004/06	52006	NO OPR		7		7		7		X	7		7		7		SOLD		X	REMOVED							
555	4-May	50004/06	32175									X									X	X		32176 NEXT		NO OPR		NO OPR	
556	5-May	50004/06	32176	GG C/ON		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		OPEN		X	>		>		>		>	
557	6-May	50004/06		OPEN		>		>		>		X	>		>		>		>		X	>		>		>		>	
558	7-May	50004/06	32176	C/ON		HOOKING UP		B/S		B/S		X	B/S		LEAKING B/S		5		7		X	7		7		7		9	
559	8-May	50004/06	32176	TROUBLESHOOTING				TROUBLESHOOTING				X	T/S DOWN		NO OPR		NO OPR		9		X	9		11		14		14	
560	9-May	50004/06	32176	TROUBLESHOOTING				TROUBLESHOOTING				X	T/S DOWN		E14		E15		BACK TO E1		X	14		15		NO OPR 15		NO OPR 15	
561	10-May	50004/06	32176	15		15		15		15		X	NO OPR		NO OPR		NO OPR		NO OPR		X	C/BACK ON		7		9		10	
562	11-May	50004/06	32176	C/OFF		HOOK UP		B/S		1		X									X	7		7		7		8	
563	11-May	50004/06	51238									X	51238		6		7		7		X	NO OPR		NO OPR		NO OPR		NO OPR	
564	12-May	50004/06	51238	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X								
565	14-May	50004/06	51238	9		10		10		REJECT C/OF		X	C/OFF		OPEN						X								
566	14-May	50004/06	31345									X			31345 C/ON		B/S		B/S		X	B/S		B/S		B/S		B/S	
567	15-May	50004/06	31345	B/S NO OPR		NO OPR		B/S		1		X	1		1		7		7		X	NO OPR		7		7		7	
568	16-May	50004/06	31345	GG		9		GG		GG T/S DOWN		X	10		10		10		10		X	W/O 90136-340 STILL DOWN						NO OPR	
569	17-May	50004/06	31345	T/S DOWN		NO OPR		GG		GG		X	NO OPR		10		12		14		X	16		18		20		23	
570	18-May	50004/06	31945	SOLD C/ON								X									X								
571	18-May	50004/06	51238			51238 C/ON		B/S		7		X	7		7		7		9		X	9		12		14		18	
572	19-May	50004/06	51238	GG		NO OPR		NO OPR		NO OPR		X									X								
573	21-May	50004/06	51238	GG		GG		GG		GG		X	21		23		26		SOLD C/OFF		X	REMOVED OPEN				NO OPR OPEN			
574	22-May	50004/06	50153	C/ON		GG		GG		GG		X	GG		GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR	
575	23-May	50004/06	50153	GG		GG	NO OPR	GG	NO OPR	GG		X	GG		GG		GG		GG		X	17		20		22		23	
576	25-May	50004/06	OPEN	>		>		>		>		X	>		>		>		>		X	>		>		>		>	

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
577	26-May	50004/06	OPEN	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
578	27-May	50004/06	OPEN	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		SHUT DOWN 0230				>	
579	29-May	50004/06	OPEN	>		>		>		>		X	>		>		>		>		X	NO OPR		NO OPR		NO OPR		NO OPR	
580	30-May	50004/06	61345	NO OPR		NO OPR		NO OPR		C/ON NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
581	31-May	50004/06	62161	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
582	1-May	50004/07	31749	7		7		7		9		X	9 •		9 •		9		9		X	NO OPR		DOWN 90121-335				NO OPR	
583	2-May	50004/07	31749	NO OPR		NO OPR		9		NO OPR		X	9 •		NO OPR		T/S DOWN		9		X	REMOVED TO REPAIR PLA		T				NO OPR	
584	3-May	50004/07	31749	C/ON		WORKING TA		T/S DOWN		>		X	TROUBLESHOOTING				>		9		X	10		11	Y				
585	4-May	50004/07	51834	C/ON		C/ON CONTR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	B/S		5		7		7	
586	5-May	50004/07	51834	GG		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
587	6-May	50004/07	51834	GG		GG		GG		NO OPR		X	GG		GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR	
588	7-May	50004/07	51834	7		NO OPR		7 •		9		X	9		NO OPR		NO OPR		NO OPR		X	12		14		14		19	
589	8-May	50004/07	51834	32		22		27		SOLD C/OFF		X	OPEN		OPEN		OPEN		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
590	9-May	50004/07	OPEN	OPEN		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR	
591	10-May	50004/07	OPEN	OPEN		OPEN		OPEN		OPEN		X	OPEN		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
592	11-May	50004/07	OPEN	OPEN		OPEN		OPEN		OPEN		X	NO OPR		NO OPR		OPEN		OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR	
593	12-May	50004/07	OPEN	>		>		>		>		X	>		>		>		>			OPEN		>		>		>	
594	14-May	50004/07		OPEN NO OPR		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		NO OPR		X								
595	14-May	50004/07	51007									X									X	51007 C/ON		>		>		7	
596	15-May	50004/07	51007					7		7		X	7		7		7		SOLD C/ON		X	REMOVED 51007				OPEN		NO OPR	
597	16-May	50004/07	OPEN	OPEN		OPEN		OPEN		OPEN		X	OPEN		NO OP		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN	
598	17-May	50004/07	OPEN									X									X								
599	17-May	50004/07		31668 GG C/ON		B/S		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	B/S NO OPR		NO OPR		NO OPR		NO OPRR	
600	18-May	50004/07	31668	GG B/S NO OPR				NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR B/S		NO OPR		NO OPR		NO OPR	
601	19-May	50004/07	31668	RCVV REDO		NO OPR		NO OPR		NO OPR		X									X								
602	21-May	50004/07	31668	B/S GG		B/S		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR		X	7		7		7		9	
603	22-May	50004/07	31668	GG		GG •		GG •		GG •		X	GG •		GG •		GG		GG		X	19		20		22		23	
604	23-May	50004/07	31668	GG		GG		GG		GG		X	GG		GG		NO OPR		NO OPR		X	HOLD FOR 19		HOLD		HOLD		HOLD	
605	25-May	50004/07	OPEN	>		>		>		>		X	>		>		>		>		X	>		>		>		>	
606	26-May	50004/07	OPEN	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
607	27-May	50004/07	OPEN	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		SHUT DOWN 0230				>	
608	29-May	50004/07	OPEN	>		>		>		>		X	>		>		>		>		X	NO OPR		NO OPR		NO OPR		NO OPR	
609	30-May	50004/07	31668	NO OPR		NO OPR		C/ON NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
610	31-May	50004/07		NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
611	1-May	50004/08	30419	NO OPR		NO OPR		NO OPR		NO OPR		X	C/ON		B/S		1 T/S		7 T/S		X	NO OPR		DOWN 90121-335				NO OPR	
612	2-May	50004/08	51207	NO OPR		NO OPR		7		NO OPR		X	7		NO OPR		T/S DOWN		7		X	11		NO OPR		T		NO OPR	
613	3-May	50004/08	51207			WORKING ON		T/S DOWN		>		X	TROUBLESHOOTING				>		7		X	7							
614	4-May	50004/08	51207	C/OFF		C/OFF		NO OPR		NO OPR		X									X								
615	4-May	50004/08	50625									X	50625 C/ON		B/S		5		7		X	7		7		7		7	
616	5-May	50004/08	50625	GG		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
617	6-May	50004/08	50625	GG		GG		GG		GG		X	GG		GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR	
618	7-May	50004/08	50625	7		7 •		7 •		8 •		X	8		10		11 •		13		X	14		14		14		19	
619	8-May	50004/08	50625	19		20		20		20		X	20		20		21		22		X	23		26		SOLD C/OFF		C/OFF	
620	9-May	50004/08	51077	C/ON		C/ON		NO OPR		NO OPR		X	T/S DOWN		C/ON		3		5		X	7		7		7		7	
621	10-May	50004/08	51077	7		7		7		SOLD		X	OPEN		NO OPR		NO OPR		NO OPR		X	OPEN		NO OPR		NO OPR		NO OPR	
622	11-May	50004/08	OPEN	OPEN		OPEN		OPEN		OPEN		X	NO OPR		NO OPR		OPEN		OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR	
623	12-May	50004/08	50157	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
624	14-May	50004/08	50153	7		7		7		28		X	C/OFF		OPEN		OPEN		NO OPR		X	OPEN		C/ON		>		8	

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
[illegible]	15-May	50004/09	51108	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	[illegible]		[illegible]		NO OPR	HOLD	HOLD	
[illegible]	15-May	50004/08	50153	SOLD 50153								X									X								
627	16-May	50004/08	NO OPR	GG		GG		GG		GG		X	10		10		10		10		X	MOVED GG TO T/S 4-4				OPEN		OPEN	
628	17-May	50004/08	OPEN	NO OPR								X									X								
[illegible]	17-May	50004/08	51238			51238 C/ON		P & GG	T/S	NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	51238 NEXT		NO OPR		NO OPR		NO OPR	
630	18-May	50004/08	OPEN	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		OPEN		X	>		>		>		>	
631	19-May	50004/08	30662	TO BE INSTALLED				NO OPR		NO OPR		X									X								
[illegible]	21-May	50004/08	30662	C/ON NO OPR		>		>		>		X	OPEN		>		>		>		X	NO OPR		NO OPR		NO OPR		NO OPR	
633	22-May	50004/08	51633	C/ON NO OPR		>		>		>		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR C/ON		NO OPR		NO OPR		NO OPR	
[illegible]	23-May	50004/08	51633	GG C/ON		GG		GG		G		X	NO OPR		NO OPR		B/S		GG		X	NO OPR		NO OPR		NO OPR		NO OPR	
635	25-May	50004/08	OPEN	>		>		>		>		X	>		>		>		>		X	>		>		>		>	
636	26-May	50004/08	OPEN	OPEN		>		>		>		X	>		>		>		>		X	>		>		>		>	
637	27-May	50004/08	OPEN	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		SHUT DOWN 0230		>			
638	29 May	50004/08	OPEN	>		>		>		>		X	>		>		>		>		X	NO OPR		NO OPR		NO OPR		NO OPR	
639	30 May	50004/08	30908	NO OPR		NO OPR		C/ON NO OPR		C/ON		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
[illegible]	31-May	50004/08	30908	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
641	1-May	50004/09	50456	SOLD		OPEN		OPEN				X									X								
642	2-May	50004/09	30419							30419		X	C/ON		SPCK SPEED		9		13		X	14		14		14		19	
[illegible]	2-May	50004/09	30419	19		2		25		28		X	SOLD C/OFF																
644	2 May	50004/09	52554									X			52554		3		12		X	12		14		14		19	
645	3-May	50004/09	52554	19		20		20		22		X	25		27		SOLD		OPEN		X	NO OPR							
646	3-May	50004/09	51834									X									X	51834 NEXT		>		>		NO OPR	
647	4-May	50004/09	33059	OPEN		OPEN		OPEN		LEAK CHECK		X	C/ON		LEAK CK		NO OPR		NO OPR		X	HOLD FOR 1ST				>		>	
648	5-May	50004/09	33059	GG		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	HOLD FOR 1ST SHIFT				>		>	
649	6-May	50004/09	33059	HOLD FOR GG		1ST SHIFT		NO OPR		NO OPR		X	GG		GG		GG		GG		X	GG		GG		GG		GG	
650	7-May	50004/09	33059	AWAITING QUALITY WRITEUP						>		X	>		NO OPR		NO OPR		NO OPR		X	NO OPR HOLD		FOR 1ST		>		>	
651	8-May	50004/09	33059	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		C/ON NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
652	9-May	50004/09	33059	NO OPR		NO OPR		NO OPR		NO OPR		X	C/ON		NO OPR C/ON		NO OPR C/ON		NO OPR C/ON		X	NO OPR		NO OPR		NO OPR		NO OPR	
653	10-May	50004/09	33059	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	B/S		1		7		SOLD C/OFF	
[illegible]	11-May	50004/09	33059	C/OFF		OPEN		OPEN		OPEN		X	NO OPR		NO OPR		OPEN		OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR	
655	12-May	50004/09	OPEN	>		>		>		>		X	>		>		>		>		X	OPEN		>		>		>	
656	14-May	50004/09		OPEN NO OPR		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN		X								
657	14-May	50004/09	31971									X									X	31971 C/ON		>		NO OPR		C/ON	
658	15-May	50004/09	31971	C/ON NO OPR		NO OPR		NO OPR		NO OPR		X	B/S NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		C/ON		B/S		B/S	
659	16-May	50004/09	31971	NO OPR		NO OPR		NO OPR		NO OPR		X	B/S		NO OPR		NO OPR		NO OPR		X	1		7		9		10	
[illegible]	17-May	50004/09	31971	GG		SOLD C/OFF						X									X								
661	17-May	50004/09	30601					30601 C/ON		B/S		X	NO OPR		C/ON		NO OPR		NO OPR		X	B/S NO OPR		NO OPR		NO OPR		NO OPR	
662	18-May	50004/09	30601	GG B/S NO OPR				NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
663	19-May	50004/09	30601	B/S		NO OPR		NO OPR		NO OPR		X									X								
664	21-May	50004/09	30601	GG B/S		NO OPR		>		>		X	B/S		B/S		B/S		B/S		X	B/S		B/S		B/S		B/S	
665	22-May	50004/09	30601	B/S NO OPR		B/S		B/S		B/S		X	B/S		B/S		B/S		B/S		X	B/S		B/S NO OPR		B/S		B/S	
666	23-May	50004/09	30601	B/S		GG NO OPR		B/S		GG B/S		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR B/S		NO OPR		NO OPR		NO OPR B/S	
667	25-May	50004/09	30601	GG B/S		GG B/S		GG B/S		GG B/S		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR B/S		NO OPR		NO OPR		NO OPR	
668	26-May	50004/09	30601	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		B/S		X	NO OPR		NO OPR		NO OPR		NO OPR	
669	27-May	50004/09	30601	B/S		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		SHUT DOWN 0230				>	
670	29-May	50004/09	30601	GG B/S		GG B/S		GG B/S		GG B/S		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR B/S		NO OPR		NO OPR		NO OPR	
[illegible]	30-May	50004/09	30601	NO OPR		NO OPR		GG B/S		GG B/S		X	GG		GG		SOLD C/OFF		OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR	
672	31 May	50004/09	31668	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	

B1/SORT/ASI/M&I/SAT/GG

	A	B	C	D	E	F	G
1	50002-ASI		50002-M&I		50002-SAT		50004-GG
2	22		16		10		4
3	40		42		12		42
4	28		40		10		8
5	56		62		8		106
6	156		28		20		10
7	2		46		8		10
8	60		44		16		38
9	40		4		2		16
10	100		2		8		38
11	56		36		8		18
12	116		46		12		2
13	8		26		8		22
14	116		66		6		16
15	8		64		12		2
16	70		24		8		48
17	50		46		20		25.33
18	198		40		14		
19	20		44		32		PLUMBING?
20	36		38		14		AVG = 3.86
21	42		34		16		
22	10		34		8		
23	2		28		10		
24	186		2		24		
25	38		48		8		
26	4		32		14		
27	54		8		30		
28	34		18		16		
29	34		6		42		
30	38		24		16		
31	60		70		10		
32	20		46		12		
33	16		36		10		

	A	B	C	D	E	F	G
34	10		30		14		
35	56		14		16		
36	28		26		10		
37	64		40		16		
38	2		24		8		
39	6		32		32		
40	46		54		2		
41	16		44		18		
42	2		2		DV6 = 14		
43	22		8		50004-SAT		
44	2		32.71		14		
45	32		50004-M&I		24		
46	46		32		22		
47	24		56		2		
48	62		68				
49	50		36				
50	46						
51	58						
52	8						
53	4						

44.31

08103

[redacted]	AST	RIS	MEI	RIS	SF	RIS	GG	RIS	NO OPR
21590			16						
21004	22	Reject							18
20543	40		42		10	sold			28
50494	28		40		12	sold			
50495	56		62		10	sold			
31764									2
30169	156	sold							94
32205			28		8	sold			18
50543	2								34
32176	60	sold							18
51368									30
30152	40	Reject							20
21625	100		46		20	sold			38
30708	56				8	sold			50
50815	116		44		16	sold			32
31532									10 Reject
30073	8								2
51638	116	Reject			2				60
31764	8		4		8	moved			68
21441									24
52007			2	sold					
52061	70	sold							21
51824	50		36		8	sold			24
50481	198		46		12	sold			46
30279	20								26
51692			26		8	sold			
51219	36	Reject							36
52011	42		64		6	sold			12
21330			64		12	sold			28

Bi Sour Part #	ASI	R/S	MI	R/S	SA	R/S	GG	R/S	Hoop	
31016			24						38	
50417	10									
51103			46	Reject					30	
31836	2								76	
31491	196								126	Reject
51103			40							
52276	38		44		8	Sold			6	
30380	4		38						2	
50136					20					
30777	54		34						56	Reject
31345			26						42	
31251			30		14	Sold			20	
32942					32	sold				
30258	34		36		14	sold				
50616										
32059	34	Reject							60	
51048	38		34		16	sold				
30255	60	Reject	34						72	
51590			28		8	sold				
31616	20								10	
30258	16								50	
31616	10									
52322			2		10	Reject				
51996	56	Reject							62	
50696	28	Reject							10	
30713	64		48		24				52	
32581	2	Reject							16	
50694			32		8	sold				
32758			8		14				24	
30152	6									
31491	46								30	

B1 Sort

Part #	ASI	R/S	MEI	R/S	SAT	R/S	GG	R/S	NO OPR	
51710	16								50	
50574	2	Reject							4	
30124	22		18		30				18	
30126			6						2	
30569	2				16	Reject			12	
30775			24		42	moved			32	
52575	32		70		16	sold			54	
51213			46		10	sold				
30419	46		36		12	sold			18	
31918			30		10	sold			12	
30896	24		14						90	
31836									54	
50136	62		26						24	
30885	50		40		14	sold				
30649			24		16	sold				
31719			32		10				24	
31485			54		16					
30279	46								116	Reject
52010	58		44		8	sold			52	
31063			2		32	sold			12	
31062					2	sold				
51946	8								30	
31764			8		18					
52068	4								24	
31673	72		32		14					
52068			54		24	Sold				
30569									18	
31345			68		22	Reject				
31782			36		2				36	
31673									16	
52068									38	Sold

BISORI Part #	ASI	R/S	M&I	R/S	SAT	S	GG	R/S	MOOPR	
51228							4	sold	22	
30662							42	sold	76	
52151									18	
31345							8		14	
51238									20	
51710							106	sold	220	
52006									36	sold
32176									24	Reject
51238							10	sold		
31345							10	sold	36	
50153							38		14	
52151									24	
31749									14	
51834							16	sold	52	
51007									2	sold
31668							38		48	
51207									12	
50625							18		30	
51077									16	sold
50157									24	
51103									18	
51238							2		16	
30662									14	
51633							20	Reject	12	
30908									46	
50456										sold
33059							16		88	sold
31971							2	sold	34	
30601							48	sold	132	
31668									24	

50004 thru 50005

4-May	50002/05	51401	M&I		M&I		M&I		M&I		X	M&I •		M&I		SAT		ASI		X	SOLD		C/OFF		OPEN		OPEN
5-May	50002/05		OPEN		OPEN		OPEN		OPEN		X									X						
5-May	50002/05	31029							31029		X	C/ON		MATE		M&I		M&I		X	M&I		M&I		M&I		M&I
6-May	50002/05	31029	M&I		M&I		M&I		M&I		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
7-May	50002/05	31029	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		SAT		X	SAT		SAT		SOLD		OPEN
8-May	50002/05	30258	RAR		RAR		RAR		RAR		X	RAR		REMATING		ASI READY		ASI		X	OCM MATE		OPEN		MATING OCM		MATED
9-May	5 002/05	31911	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
10-May	50002/05	31911	M&I PLUMB		M&I		M&I		M&I		X									X							
10-May	50002/05	30622									X	30622		C/ON		M&I		M&I		X	M						
11-May	50002/05	31911	SAT		SAT		SOLD		C/OFF		X									X							
11-May	50002/05	30622									X	30622 C/ON								X					?		
12-May	50002/05	30662	M&I		M&I		M&I		M&I		X	M&I		NO OPR		M&I		M&I		X	M&I		M&I		SHUT DOWN		SHUT DO
14-May	50002/05	30662	M&I		ASI REJECT		REMOVED UFC		ASI		X	ASI		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI
15-May	50002/05	51128	ASI		ASI		ASI		ASI		X	ASI		SOLD		MATING F/M&		FLUSH & PLUM		X	M&I		M&I		M&I		M&I
16-May	50002/05	51128	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		SAT		SAT		SAT
17-May	50002/05	51128	C/OFF		RAR		RAR		RAR		X	RAR		RAR		RAR		RAR		X	RAR		RAR		RAR		RAR
18-May	50002/05	32229	120012		AWAITING WRITEUP				OPR 066		X	OPR 066		OPR 066		M&I		M&I		X	M&I		NO OPR		M&I		M&I
19-May	50002/05	32229	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	NO OPR		NO OPR		?		?
21-May	50002/05	32229	M&I •		M&I •		M&I •		M&I		X	M&I		M&I		M&I		M&I		X	T/S DOWN		M&I		M&I		M&I
22-May	50002/05	32229	M&I		SAT		SAT		SAT		X	FINAL ELEC		CHMS		SOLD											
22-May	50002/05	51238																51238		X	PLUMB		M&I		M&I		DEMATED
23-May	50002/05	51238	DEMATED TO ASI				ASI		REJECTED AS		X	REJECT C/OFF								X							
23-May	50002/05	30834												30834 C/ON		RAR		RAR		X	RAR		COMPLETE RAR				RAR
24-May	50002/05	30834	RAR		TZ0012		TZ0012		TZ0012		X	TZ0012		OPR 020		OPR 050		OPR 66		X	OPR 66		OPR 66		OPR 66		OPR 66
25-May	50002/05	30834	SAT		LEAK TEST		M&I		SAT		X	SAT		SAT		SAT		SAT		X	ELECT CK FIN		C/OFF		OPEN		OPEN
26-May	50002/05	OPEN	OPEN		OPEN		OPEN		OPEN		X	NO OPR		NO OPR		NO OPR		NO ORP		X	NO OPR		NO OPR		NO OPR		NO OPRA
27-May	50002/05	32136	NO OPR RAR		NO OPR RAR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
29-May	50002/05	32136	PLUMB RAR		RAR		RAR		RAR		X	OP 066		OP 066		M&I		M&I		X	M&I		M&I		M&I		M&I
30-May	50002/05	32136	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
31-May	50002/05	32136	M&I		M&I		M&I		M&I		x	M&I		M&I		DEMATED		ASI MATRIX		X	OP 66		ASI		OP 66		OP 66
1-May	50004/01	51901	GG OFF	0							X									X							
1-May	50004/01	51103			GG C/ON		B S		GG	0	X	GG	0	GG •	0	GG	0	GG	0	X	GG	0	SOLD				
1-May	50004/01	51828									X									X					GG C/ON	0	B S
2-May	50004/01	51828	GG		GG		GG •		GG •		X	GG •		GG		GG		GG		X	GG		GG		GG		GG
3-May	50004/01	51828	GG		GG		GG		GG •		X	GG		GG		GG		GG		X	GG		SOLD				
3-May	50004/01	50945									X									X					C/ON		C/ON
4-May	50004/01	50945	C/ON		RW		C/ON		GG		X	GG •		GG •		GG		GG		X	GG		GG		•		GG
5-May	50004/01		BEING CALIBRATED				»		»		X	READY NO OPR				NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
6-May	50004/01	50945	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
7-May	50004/01	50945	NO OPR		NO OPR		NO OPR		NO OPR		X	GG		GG		GG		GG		X	GG		GG		GG		SOLD
8-May	50004/01	51103			OPEN		OPEN		OPEN		X	GG		NO OPR		»		»		X	OPEN		PLUMB		BACK/ON		BACK/ON
9-May	50004/01	51103	GG		NO OPR		NO OPR		GG		X	B/S		REJECT		C/OFF		REMOVE		X							
9-May	50004/01	30662																30662		X	C/ON		B/S		?		?
10-May	50004/01	30169	GG		NO OPR		NO OPR		GG		X	GG		GG		GG		GG		X	M&I		M&I		M&I		M&I
12-May	50004/01	30169	GG «		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
14-May	50004/01	30169	GG		NO OPR		NO OPR		NO OPR		X	GG		GG		GG		GG		X	GG		GG		GG		GG
15-May	50004/01	30169	SOLD GG		OPEN		OPEN		OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		C/ON		PLUMB		GG
16-May	50004/01	30662	GG		GG		GG		GG		X	GG		GG		GG		GG		X	GG		GG REJECT		C/ON		C/ON
17-May	50004/01	30353	GG		B/S		GG		GG		X	GG		GG		NO OPR		NO OPR		X	GG		GG		GG		GG

18-May	50004/01	30353	GG		GG		GG		GG		X	GG		GG		GG		SOLD		X	NO OPR								
18-May	50004/01	52086																						52086		?		?	
19-May	50004/01	52086	GG		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		?		?	
21-May	50004/01	52086	GG		NO OPR		NO OPR		NO OPR		X	GG		GG		GG		GG		X	GG		NO OPR		NO OPR		NO OPR	
22-May	50004/01	52086	NO OPR		NO OPR		NO OPR		GG		X	GG *		GG		SOLD		OPEN		X	C/ON		PLUMB		GG		GG	
23-May	50004/01	51590	GG		GG		GG		GG *		X	GG *		GG		GG		GG *		X	T/S DOWN W/O 90143-343						T/S AUT	
24-May	50004/01	51590	NO OPR		T/S DOWN		T/S DOWN		NO OPR		X	GG		GG		GG		GG		X	GG		GG		GG		GG	
25-May	50004/01	51590	GG SOLD REMOVED																										
25-May	50004/01	31532			31532 GG B/S		NO OPR		B/S		X	GG B/S		GG		GG		GG		X	GG		?		MEETING		?	
26-May	50004/01	31532	GG NO OPR		NO OPR		NO OPR		NO OPR		X	GG NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
27-May	50004/01	31532	TRAINING		»		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
29-May	50004/01	31532	GG		SOLD		C/OFF																						
29-May	50004/01	52061							52061		X	GG B/S		GG		GG		GG		X	GG		GG		GG		SOLD C/A	
30-May	50004/01	30843	C/ON		B/S		GG		GG		X	GG		GG		GG		GG		X	GG		GG		GG		GG	
31-May	50004/01	30843	GG		GG		GG		GG		X	GG		GG		GG		GG		X	GG		GG		GG		GG	
1-May	50004/02	50483	WG10T GG TRAINING		»		»		»		X	*		»		»		»		X	»		»		»		»	
2-May	50004/02	50483	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
3-May	50004/02	50483	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
4-May	50004/02	50483	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
5-May	50004/02	50483	GG		TRAINING		»		»		X	»		»		»		»		X	»		»		»		»	
6-May	50004/02	50483	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
7-May	50004/02	50483	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
8-May	50004/02	50483	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
9-May	50004/02	50483	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
10-May	50004/02	50483	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
11-May	50004/02	50483	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
12-May	50004/02	OPEN	OPEN		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN		X	TRAINING		»		»		»	
14-May	50004/02	OPEN	GG TRAINING		»		»		»		X	WG TRAINING				»		»		X	»		»		»		»	
15-May	50004/02	OPEN	OPEN		OPEN		OPEN		OPEN		X	GG TRAINING		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN	
16-May	50004/02	OPEN	»		»		OPEN		OPEN		X	GG TRAINING		»		»		»		X	»		»		»		»	
17-May	50004/02	OPEN	OPEN		OPEN		OPEN		OPEN		X	GG TRAINING		OPEN		OPEN		OPEN		X	OPEN		OPEN		OPEN		OPEN	
18-May	50004/02	OPEN	OPEN		GG TRAINING		»		»		X	»		»		»		»		X	»		»		»		»	
19-May	50004/02	OPEN	OPEN		OPEN		OPEN		OPEN		X	TRAINING		»		»		»		X	»		»		?		?	
21-May	50004/02	OPEN	OPEN		OPEN		OPEN		OPEN		X	WG-10 T TRAINING				»		»		X	»		»		»		»	
22-May	50004/02	30977	GG TRAINING		»		»		»		X	WG 10 TRAINING				»		»		X	»		»		»		»	
23-May	50004/02	30977	GG TRAINING		»		»		»		X	WG 10 TRAINING				»		»		X	»		»		»		»	
24-May	50004/02	30977	GG TRAINING		»		»		»		X	»		GG TRAINING		»		»		X	»		»		»		»	
25-May	50004/02	30977	GG TRAINING		»		»		»		X	WG 10 TRAINING				»		»		X	»		»		»		»	
26-May	50004/02	30977	GG NO OPR		NO OPR		NO OPR		NO OPR		X	WG TRAINING		»		»		»		X	TRAINING		»		»		»	
27-May	50004/02	30977	TRAINING		»		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
29-May	50004/02	30977	GG TRAINING		»		»		»		X	WG 10 TRAINING				»		»		X	WG 10 T TRAINING				»		»	
30-May	50004/02	30977	GG TRAINING		»		»		»		X	»		»		»		»		X	WG 10 T TRAINING				»		»	
31-May	50004/02	30977	GG TRAINING		»		»		»		X	WG 10 T TRAINING				»		»		X	WG 10 T TRAINING				»		»	
1-May	50004/03	30753	WG10T GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
2-May	50004/03	30753	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
3-May	50004/03	30753	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
4-May	50004/03	30753	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	
5-May	50004/03	30753	GG		TRAINING		»		»		X	»		»		»		»		X	»		»		»		»	
6-May	50004/03	30753	GG TRAINING		»		»		»		X	»		»		»		»		X	»		»		»		»	

7-May	50004/03	30753	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
8-May	50004/03	30753	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
9-May	50004/03	30753	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
10-May	50004/03	30753	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
11-May	50004/03	30753	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
12-May	50004/03	30253	TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
14-May	50004/03	30753	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
15-May	50004/03	30753	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
16-May	50004/03	30753	SOLD	C/ON		GG TRAINING																							
16-May	50004/03	32176						32176		X	GG TRAINING		»		»		»		X	»		»		»		»	
17-May	50004/03	32176	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
18-May	50004/03	32176	GG TRAINING	»		»		»		X	GG TRAINING		»		»		»		X	»		»		»		»	
19-May	50004/03	32176	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		?	?
21-May	50004/03	32176	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
22-May	50004/03	32176	GG TRAINING	»		»		»		X	»		»		»		»		X	»		»		»		»	
23-May	50004/03	32176	GG TRAINING	»		»		»		X	WG 10 TRAINING		»		»		»		X	»		»		»		»	
24-May	50004/03	32176	GG TRAINING	»		»		»		X																			
24-May	50004/03	30753									30753		GG TRAINING		»		»		X	»		»		»		»	
25-May	50004/03	32176	GG TRAINING	»		»		»		X	WG 10 TRAINING		»		»		»		X	»		»		»		»	
26-May	50004/03	32176	GG NO OPR	NO OPR		NO OPR		NO OPR		X	WG TRAINING		»		»		»		X	TRAINING		»		»		»	
27-May	50004/03	32176	TRAINING	»		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
29-May	50004/03	32176	GG TRAINING	»		»		REJECTED GG		X	WG 10 T TRAINING								X	OPEN		OPEN		OPEN		OPEN	
30-May	50004/03	51638	GG C/ON	C/ON NO OPR		GG TRAINING		»		X	»		»		»		»		X	WG 10 T TRAINING				»		»	
31-May	50004/03	51638	GG TRAINING	»		»		»		X	WG 10 T TRAINING				»		»		X	»		»		»		»	
1-May	50004/10	30618	SOLD							X									X								
1-May	50004/10	51099		GG 0	0	D S	0	GG	0	X	GG	0	GG	0	GG	0	GG	0	X	GG	0	SOLD					
1-May	50004/10	51417								X									X					GG C/ON	0	B S	
2-May	50004/10	51417	GG	GG		GG		GG		X	GG NO OPR		NO OPR		NO OPR		NO OPR		X	GG		GG		GG		GG	
3-May	50004/10	51417	GG	GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR		X	GG		GG		GG		GG	
4-May	50004/10	51475	SOLD	OPEN		OPEN		IN CALIBRATI		X	»		»		»		»		X	»		»		»		»	
5-May	50004/10	50045	NO OPR	NO OPR		NO OPR		CALIBRATION		X	»		»		»		»		X	NO OPR		NO OPR		NO OPR		NO OPR	
6-May	50004/10		CALIBRATION	»		»		»		X	»		»		»		»		X	»		»		»		»	
7-May	50004/10		BEING CALIBRATED			»		»		X	»		»		»		»		X	C/ON		PLUMB		B/S		?	
8-May	50004/10	52054	NO OPR	GG		NO OPR		GG		X	GG		GG		GG		GG		X	GG		NO OPR		NO OPR		NO OPR	
9-May	50004/10	52054	GG	GG		GG		GG		X	GG		GG		SOLD												
9-May	50004/10	30662															30662		X	OPEN		C/ON		?		?	
10-May	50004/10	30662	GG	GG		GG		C/OFF		X	REMOVED		C/ON		NO OPR		NO OPR		X	C/ON		GG		?		?	
11-May	50004/10	51500	GG	GG		GG		GG		X	GG		GG		GG		GG		X	GG		GG		GG		GG	
12-May	50004/10	51500	GG	NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
14-May	50004/10	51500	GG	GG		GG		GG		X	GG		GG		GG		GG		X	SOLD		C/ON		PLUMB		PLUMB	
15-May	50004/10	50006	C/ON	B/S		GG		GG		X	GG		GG		GG		GG		X	GG		GG		GG		GG	
16-May	50004/10	50006	GG	NO OPR		NO OPR		NO OPR		X	GG		NO OPR		GG		NO OPR		X	GG		GG		GG		GG	
17-May	50004/10	50006	NO OPR	NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NOL		X	GG		GG		GG		GG	
18-May	50004/10	50006	SOLD	NO OPR		NO OPR		NO OPR		X	C/OFF		C/OFF		C/OFF		SOLD		X	REMOVED							
18-May	50004/10	52531																				52531		?		?	
19-May	50004/10	52531	NO OPR	NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		?		?	
21-May	50004/10	52531	GG	GG		GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
22-May	50004/10	52531	GG	GG		GG		GG		X	NO OPR		NO OPR		NO OPR		GG		X	NO OPR		NO OPR		NO OPR		NO OPR	
24-May	50004/10	52531	REPLACED GOV CAN FOU.			GG		GG		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	

25-May	50004/10	52531	NO OPR		GG		GG		SOLD		X	NO OPR		NO OPR													
25-May	50004/10	52061														52061		GG NO OPR		X	OPEN		NO OPR		NO OPR		NO OPR
26-May	50004/10	52061	GG C/ON	NO OPR			NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
27-May	50004/10	OPEN	»		»		»		»		X	»		»		»		»		X	»		»		»		»
30-May	50004/10	OPEN	OPEN		OPEN		OPEN		OPEN		X	GG C/ON		GG		GG		GG		X	GG NO OPR		NO OPR		NO OPR		NO OPR
31-May	50004/10	31652	NO OPR		NO OPR		NO OPR																				
31-May	50004/10	31653							31653		X	GG		GG		GG		GG		X	GG NO OPR		NO OPR		NO OPR		NO OPR
1-May	50005/01	52353	ASI	0	ASI	0	ASI	0	ASI	0	X	ASI	0	ASI	0	ASI	0	ASI	0	X	ASI	0	ASI	0	ASI	0	ASI	
2-May	50005/01	52353	ASI LEAK		ASI LEAK		ASI		ASI		X	ASI		ASI		ASI		SOLD		X	FLUSH						
2-May	50005/01	50456									X									X			PLUMB		ASI		ASI
3-May	50005/01	30456	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
4-May	50005/01	50456	ASI		SOLD		OPEN				X									X							
4-May	50005/01	50153	C/ON		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR
5-May	50005/01	50153	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI		X	SOLD		FLUSH		NO OPR		C/ON
6-May	50005/01		OPEN		OPEN		OPEN		OPEN		X									X							
6-May	50005/01	50440									X	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR
7-May	50005/01	50440	ASI		ASI		ASI *		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		SOLD
8-May	50005/01	51213	NO OPR		NO OPR		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
9-May	50005/01	51213	ASI		ASI		ASI		ASI		X	ASI		SOLD													
9-May	50005/01	30404														30404				X	C/ON		ASI		ASI		ASI
10-May	50005/01	30404	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		NO OPR		NO OPR
11-May	50005/01	30404	ASI		SOLD		C/ON		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
12-May	50005/01	30144	ASI		NEED MFS		NO OPR		NO OPR		X	ASI		ASI		ASI		SOLD		X	NO OPR		NO OPR		?		?
14-May	50005/01	REMOVED 30144			DUE CALIBRATION				OPEN		X	DOWN FOR CALIBRATION				»		»		X	»		»		»		»
15-May	50005/01	OPEN BEING CALIBRATED					»		»		X	»		»		»		»		X	»		»		»		»
16-May	50005/01	OPEN	OPEN		OPEN		OPEN		OPEN		X																
17-May	50005/01	30253	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		ASI		ASI		ASI		X	C/OFF		OPEN		PLUMB		PLUMB
18-May	50005/01	51007	NO OPR		NO OPR		ASI		NO OPR		X	NO OPR		ASI		ASI		NO OPR		X	ASI		ASI		ASI		ASI
19-May	50005/01	51007	NO OPR		NO OPR		ASI		ASI		X	GOING C/B		ASI		ASI		ASI		X	NO OPR		NO OPR		?		?
21-May	50005/01	51007	ASI		ASI		ASI		ASI		X	ASI *		ASI *		ASI		SOLD		X	FLUSH		C/ON		ASI		ASI
22-May	50005/01	50927	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
23-May	50005/01	50927	ASI		ASI *		ASI TURN ONS		ASI *		X	ASI *		ASI *		ASI *		ASI		X	ASI		SOLD		C/OFF		C/ON
24-May	50005/01	30104	ASI C/ON		PLUMB		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
25-May	50005/01	30104	ASI		ASI		ASI		ASI		X	ASI TROUBLESHOOTING				ASI		ASI		X	SOLD		S/F		C/ON		
26-May	50005/01	50118	C/ON ASI		NO OPR		NO OPR		NO OPR		X	GG C/ON		»		»		»		X	NO OPR M&I		C/ON		NO OPR		NO OPR
27-May	50005/01	50118	NO OPR ASI C/ON				NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
29-May	50005/01	50118	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
30-May	50005/01	50118	SOLD C/OFF		OPEN																						
30-May	50005/01	52322					52322		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
31-May	50005/01	52322	ASI SOLD		C/OFF																						
31-May	50005/01	30861					30861		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
1-May	50005/02	50915	ASI	0	ASI	0	ASI	0	ASI	0	X	ASI	0	ASI	0	SOLD	0			X							
1-May	50005/02	50838									X							50838		X	ASI INST	0	ASI	0	ASI	0	?
2-May	50005/02	50838	ASI		NO OPR		NO OPR		NO OPR		X	ASI		ASI		SAI		ASI		X	ASI		ASI		ASI		ASI
3-May	50005/02	30838	ASI		ASI		ASI		ASI SOLD		X	FLUSH								X							
3-May	50005/02	30588									X			C/IN		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI
4-May	50005/02	30588	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
5-May	50005/02	30588	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
6-May	50005/02	30588	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR

7-May	50005/02	30588	ASI		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI	
8-May	50005/02	30588	ASI		NO OPR		NO OPR		ASI		X	ASI		ASI		ASI		SUPERFLUSH		X	C/OFF		C/OFF		ASI	
9-May	50005/02	30446	ASI		NO OPR		NO OPR		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI	
10-May	50005/02	30446	ASI		NO OPR		NO OPR		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI	
11-May	50005/02	30446	NO OPR		NO OPR		NO OPR		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI	
12-May	50005/02	30446	ASI		ASI		ASI		ASI		X	TROUBLE SHOOTING				NO OPR		NO OPR		X	NO OPR		NO OPR		?	
14-May	50005/02	30446	ASI		DUE CALIBRATION				OPEN		X	DOWN FOR CALIBRATION				>>		>>		X	>>		>>		>>	
15-May	50005/02	30446	ASI		DUE CALIBRATION				ASI		X	ASI		DUE CALIBRATION				>>		X	>>		CALIBRATING		>>	
16-May	50005/02	30446										30446		ASI		ASI		ASI		X	PLUMB		ASI		ASI	
16-May	50005/02	30446	ASI		CALIBRATION		>>		>>		X	OPEN		T/S DUE CALIBRATION				>>		X	>>		>>		>>	
17-May	50005/02	OPEN	OPEN		ASI		ASI		ASI		X	NO OPR		ASI		ASI		ASI		X	ASI		ASI		ASI	
18-May	50005/02	31542	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI		X	NO OPR		NO OPR		NO OPR	
19-May	50005/02	31542	NO OPR		NO OPR		NO OPR		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		?	
21-May	50005/02	31542	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI	
22-May	50005/02	31542	ASI		ASI		ASI		SOLD		X	C/OFF SOLD														
22-May	50005/02	50693														50693 C/ON		ASI		X	ASI		ASI		NO OPR	
23-May	50005/02	50693	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI	
24-May	50005/02	50693	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI	
25-May	50005/02	50693	ASI		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI	
26-May	50005/02	50693	ASI		ASI		SOLD SAFETY WIRE & FLUSHIN				>>			>>		>>		>>		X						
26-May	50005/02	30656																			30656		NO OPR ASI		NO OPR	
27-May	50005/02	30656	NO OPR ASI C/ON				NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR	
29-May	50005/02	30656	ASI		NO OPR		NO OPR		NO OPR		X	ASI PLUMB		ASI		ASI		ASI		X	ASI		ASI		ASI	
30-May	50005/02	30656	SOLD C/OFF		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI	
31-May	50005/02	30656	NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI		X	ASI		SEE NOTE		NO OPR	
1-May	50005/03	30942	D/B	0	D/B	0	REJECT				X									X						
1-May	50005/03	30618							D/B	0	X	D/B	0	NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR	
2-May	50005/03	30618	D/B		D/B		REJECT				X									X						
2-May	50005/03	52043							NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR	
3-May	50005/03	52043	D/B		NO OPR		D/B		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR	
4-May	50005/03	52043	D/B		NO OPR		NO OPR		NO OPR		X	NO OPR		D/B		NO OPR		NO OPR		X	D/B		D/B		D/B	
5-May	50005/03	52043	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR	
6-May	50005/03	52043	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR	
7-May	50005/03	52043	DB		DB		SOLD				X									X						
7-May	50005/03	50494							50494		X	NO OPR		NO OPR		NO OPR		NO OPR		X	D/B		D/B		D/B	
8-May	50005/03	50494	D/B		SOLD		D/B		D/B		X	NO OPR		NO OPR		NO OPR		NO OPR		X	D/B		D/B		D/B	
9-May	50005/03	52286	D/B		SOLD																					
9-May	50005/03	51433					51433		D/B		X	D/B		NO OPR		NO OPR		NO OPR		X	51433					
10-May	50005/03	51433	SOLD		D/B		D/B		D/B		X	D/B		NO OPR		NO OPR		NO OPR		X	D/B		NO OPR		NO OPR	
11-May	50005/03	30380	SOLD		D/B		D/B		D/B		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR	
12-May	50005/03	30306	?		?		?		?		X	?		?		?		?		X	?		?		?	
14-May	50005/03	30306	D/B CALIBRATION				>>		OPEN		X	DOWN FOR CALIBRATION				>>		>>		X	>>		>>		>>	
15-May	50005/03	30306	D/B		DUE CALIBRATION				>>		X	>>		>>		>>		>>		X	>>		>>		>>	
16-May	50005/03	30306	D/B		CALIBRATION		>>		>>		X	T/S DUE CALIBRATION				>>		>>		X	>>		>>		>>	
17-May	50005/03	30306	D/B		D/B		SOLD		D/B C/ON		X	D/B		D/B		D/B		SOLD		X	D/B		D/B		D/B	
18-May	50005/03	30966	D/B		D/B		O/B		D/B		X	D/B LEAK		D/B		D/B		D/B		X	D/B		?		?	
19-May	50005/03	30966	D/B SOLD		D/B		D/B		D/B		X															
19-May	50005/03	30852										30852		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		?	
21-May	50005/03	30852	D/B		D/B		D/B		SOLD		X															

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21-May	50005/03	51341				51341	X	NO OPR	NO OPR	NO OPR	NO OPR	X	NO OPR	NO OPR	NO OPR	NO OPR
22-May	50005/03	51341	D/B	D/B	D/B SOLD...											
22-May	50005/03	30258				30258 C/ON	X	D/B	D/B •	D/B	D/B	X	NO OPR	NO OPR	NO OPR	NO OPR
23-May	50005/03	30258	D/B	SOLD	D/B	D/B	X									
23-May	50005/03	30690						30690	D/B SOLD							
23-May	50005/03	30279								30279 C/ON	D/B	X	D/B	D/B	D/B	D/B
24-May	50005/03	30279	D/B	D/B	D/B SOLD											
24-May	50005/03	32275				32275	X	D/B	C/ON	D/B	D/B	X	D/B	D/B	D/B	D/B
25-May	50005/03	50417	REJECTED D/B REMOVED													
25-May	50005/03	31656		31656	D/B	D/B	X	NO OPR	NO OPR	NO OPR	NO OPR	X	NO OPR	NO OPR	NO OPR	NO OPR
26-May	50005/03	31656	D/B SOLD C/OFF													
26-May	50005/03	30073		30073 D/B	D/B	SOLD	X	NO OPR D/B C/OFF		NO OPR	D/B C/OFF	X	NO OPR D/B C/OFF		NO OPR	NO OPR
27-May	50005/03	30073	D/B C/ON	NO OPR	NO OPR	NO OPR	X	NO OPR	NO OPR	NO OPR	NO OPR	X	NO OPR	NO OPR	NO OPR	NO OPR
29-May	50005/03	33059	PLUMB D/B	CYCLING D/B	D/B	NO OPR	X	D/B NO OPR	NO OPR	NO OPR	NO OPR	X	NO OPR	NO OPR	NO OPR	NO OPR
30-May	50005/03	33059	D/B REJECT		D/B	D/B	X	D/B OPEN	NO OPR	NO OPR	NO OPR	X	D/B OPEN	OPEN	OPEN	OPEN
31-May	50005/03	32275	D/B REJECTED													
31-May	50005/03	31491		31491	D/B	D/B NO OPR	X	NO OPR	NO OPR	NO OPR	NO OPR	X	D/B NO OPR	NO OPR	NO OPR	NO OPR
1-May	5^005/04	30404	WG10T D/B TRAINING >		>	>	X	>	>	>	>	X	>	>	>	>
2-May	50005/04	30404	D/B	SOLD			X					X				
2-May	50005/04	51013			D/B C/ O	C/0	X	D/B TRAINING >>		>>	>>	X	>>	>>	>>	>>
3-May	50005/04	51013	REJECTED				X					X				
3-May	50005/04	50145		D/B TRAINING >>		>>	X	>>	>>	>>	>>	X	>>	>>	>>	>>
4-May	50005/04	50145	D/B TRAINING	>>	>>	>>	X	>>	>>	->	>>	X	>>	>>	>>	>>
5-May	50005/04	50145	DB TRAINING	>>	>>	>>	X	>>	>>	>>	>>	X	>>	>>	>>	>>
6-May	50005/04	50145	DB TRAINING	>>	>>	>>	X	>>	>>	>>	>>	X	NO OPR	NO OPR	NO OPR	NO OPR
7-May	50005/04	50145	D/B TRAINING	>>	>>	>>	X	>>	>>	>>	>>	X	>>	>>	>>	>>
8-May	50005/04	50145	D/B TRAINING	>>	>>	>>	X	>>	>>	>>	>>	X	>>	>>	>>	>>
9-May	50005/04	50145	D/B TRAINING	>>	>>	>>	X	>>	>>	>>	>>	X	>>	>>	>>	>>
10-May	50005/04	50145	DB TRAINING	>>	>>	>>	X	>>	>>	>>	>>	X	>>	>>	>>	>>
11-May	50005/04	30690	D/B TRAINING	>>	REJECTED	C/ON	X	GG TRAINING	>>	>>	>>	X	D/B TRAINING	>>	>>	>>
12-May	50005/04	DB TRAINING		>>	>>	>>	X	>>	>>	>>	>>	X	>>	>>	?	?
14-May	50005/04	30690	D/B TRAINING	>>	WG TRAINING	>>	X	>>	>>	>>	>>	X	T/S/DOWN	>>	>>	>>
15-May	50005/04	50925	D/B TRAINING	>>	>>	>>	X	D/B TRAINING		>>	>>	X	>>	>>	>>	>>
16-May	50005/04	50925	D/B TRAINING	>>	>>	>>	X	D/B TRAINING		>>	>>	X	>>	>>	>>	>>
17-May	50005/04	50925	D/B TRAINING	>>	>>	>>	X	>>	D/B TRAINING	>	>>	X	>>	>>	>>	>>
18-May	50005/04	50925	D/B TRAINING	>>	>>	>>	X	D/B TRAINING		>>	>>	X	>>	>>	?	?
19-May	50005/04	50925	D/B/ TRAINING		>>	>>	X	>>	>>	>>	>>	X	>>	>>	>>	>>
21-May	50005/04	50925	D/B TRAINING	>>	>>	WG 10 T TRAINING			>>	>>	>>	X	>>	>>	>>	>>
22-May	50005/04	50925	D/B TRAINING	>>	>>	>>	X	>>	NC 10 TRAINING		>>	X	>>	>>	>>	>>
23-May	50005/04	50925	D/B TRAINING	>>	>>	>>	X	WG 10 TRAINING		>>	>>	X	>>	>>	>>	>>
24-May	50005/04	50925	D/B TRAINING	>>	>>	>>	X	D/B TRAINING		>>	>>	X	>>	>>	>>	>>
25-May	50005/04	50925	D/B TRAINING	>>	>>	>>	X	WG 10 T TRAINING		>>	>>	X	>>	>>	>>	>>
26-May	50005/04	50925	D/B NO OPERATOR		NO OPR	NO OPR	X	WG 10 TRAINING		TRAINING	>>	X	TRAINING			
27-May	50005/04	50925	TRAINING	NO OPR	NO OPR	NO OPR	X	NO OPR	NO OPR	NO OPR	NO OPR	X	NO OPR	NO OPR	NO OPR	NO OPR
29-May	50005/04	50925	D/B TRAINING	>>	>>	>>	X	WG 10 T TRAINING		>>	>>	X	WG TRAINING	>>	>>	>>
30-May	50005/04	50925	D/B TRAINING	>>	SOLD D/B											
30-May	50005/04	30159				30159	X	WG 10 T TRAINING		>>	>>	X	WG 10 T TRAINING		>>	>>
31-May	50005/04	30159	D/B TRAINING	>>	>>	>>	X	WG 10 T TRAINING		>>	>>	X	D/B TRAINING	>>	>>	>>
1-May	50005/05	51999	ASI 0	ASI	ASI	ASI	X	ASI •	ASI	ASI	ASI	X	ASI	SOLD		

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1-May	50005/05	30104								X							X				C/O		SPT CK	
2-May	50005/05	30104	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI	X	SOLD						
2-May	50005/05	51901								X								X			C/O		AST		AST
3-May	50005/05	51901	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI	X	SOLD/OFF						
3-May	50005/05	51828								X								X			C/ON		ASI		ASI
4-May	50005/05	51828	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		NO OPR	X	ASI		ASI		ASI		ASI
5-May	50005/05	51828	NO OPR		ASI		ASI		ASI	X	SOLD		C/OFF		51638		ASI	X	NO OPR		NO OPR		NO OPR		NO OPR
5-May	50005/05	51638								X								X							
6-May	50005/05	51638	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI
7-May	50005/05	51638	ASI		NO OPR		NO OPR		ASI	X	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI
8-May	50005/05	51638	ASI		ASI		ASI		ASI	X	ASI		ASI		SOLD			X							
8-May	50005/05	30404								X							30404	X	C/ON		ASI		ASI		ASI
9-May	50005/05	51045	C/ON		NO OPR		NO OPR		NO OPR	X	ASI		ASI		ASI		NO OPR	X	ASI		ASI		ASI		ASI
10-May	50005/05	51045	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI	X	ASI		SOLD		C/OFF		C/OFF
11-May	50005/05	51433	C/ON		NO OPR		NO OPR		ASI	X	ASI		ASI		ASI		NO OPR	X	NO OPR		NO OPR		NO OPR		NO OPR
12-May	50005/05	51433	NO OPR		NO OPR		ASI		?	X	ASI		ASI		ASI		GOING CB	X	ASI		ASI		?		?
14-May	50005/05	51433	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI	X	T/S DOWN		>>		>>		>>
15-May	50005/05	51433	ASI		T/S DOWN		ASI		ASI	X	ASI		ASI		ASI		ASI	X	ASI		GOING CB		ASI		ASI
16-May	50005/05	51433	ASI		ASI		ASI		ASI	X	ASI		ASI		C/ON		ASI	X	ASI		ASI		ASI		ASI
17-May	50005/05	50145	ASI		T/S DOWN		NO OPR		NO OPR	X	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		SOLD
18-May	50005/05	50145	C/OFF																						
18-May	50005/05	51663			51663		PLUMB		ASI	X	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI
19-May	50005/05	51663	ASI		ASI		ASI		ASI	X	NO OPR		W/O 90139-306				STILL OPEN	X	>>		>>		?		?
21-May	50005/05	51663	ASI		T/S DN*		ASI *		NO OPR *	X	ASI *		ASI *		ASI		C/OFF	X	C/OFF		OPEN		OPEN		OPEN
22-May	50005/05	OPEN	OPEN		OPEN		OPEN		OPEN	X	OPEN		OPEN		OPEN		OPEN	X	NO OPR						
22-May	50005/05	30966																			30966 C/ON		PLUMB		ASI
23-May	50005/05	30966	C/ASI NO OPR		NO OPR		PLUMB		ASI	X	ASI		NO OPR		NO OPR		NO OPR	X	NO OPR		ASI		ASI		ASI
24-May	50005/05	30966	ASI		ASI		ASI		ASI	X	NO OPR		NO OPR		NO OPR		NO OPR	X	ASI		ASI		ASI		ASI
25-May	50005/05	30966	ASI SOLD		REMOVED		ASI FLUSHING		PLUMB	X															
26-May	50005/05	51103	ASI		ASI		ASI		ASI TROUBLESHOOTING				ASI NO OPR		NO OPR		ASI	X	ASI		GOING C/B		ASI		ASI
27-May	50005/05	51103	ASI		ASI		ASI		SOLD NEED W/	X	NO OPR		NO OPR		NO OPR		NO OPR	X	NO OPR		NO OPR		NO OPR		NO OPR
29-May	50005/05	51917	C/ON ASI		ASI		ASI		ASI	X	ASI		NO OPR		NO OPR		NO OPR	X	ASI		ASI		ASI		ASI
30-May	50005/05	51917	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI
31-May	50005/05	51917	ASI SOLD		SUPER FLUSHING																				
31-May	50005/05	30253					30253		ASI	X	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI
1-May	50005/06	50395	ASI		ASI		SOLD		SUPR FLUSH	X	SOLD							X							
1-May	50005/06	51401								X			C/O		NO OPR		NO OPR	X	PLUMBING		ASI		ASI		ASI
2-May	50005/06	51401	ASI		ASI		ASI		ASL	X	ASI M		ASI M		SOLD			X							
2-May	50005/06	31029								X							ASI	X	ASI		ASI		ASI		ASI
3-May	50005/06	31029	ASI		ASI *		ASI *		ASI *	X	*		*		ASI		ASI	X	ASI		ASI		ASI		ASI
4-May	50005/06	31029	ASI		ASI		ASI *		ASI	X	ASI *		ASI *		ASAI		ASI	X	ASI		ASI		ASI		ASI
5-May	50005/06	31029	ASI		ASI		ASI		ASI	X	REMOVED		OPEN		31911		NO OPR	X	NO OPR		NO OPR		NO OPR		NO OPR
5-May	50005/06	31911								X								X							
6-May	50005/06	31911	NO OPR		NO OPR		NO OPR		NO OPR	X	NO OPR		NO OPR		NO OPR		NO OPR	X	NO OPR		NO OPR		NO OPR		NO OPR
7-May	50005/06	31911	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI	X	ASI		ASI		ASI		ASI
8-May	50005/06	31911	ASI		ASI		ASI		ASI *	X	ASI *		ASI		SOLD										
8-May	50005/06	30258															30258	X	ASI		ASI		ASI		ASI
9-May	50005.06	30258	ASI		ASI		ASI		ASI	X	ASI		ASI		SOLD		C/OFF	X	C/OFF		C/OFF		C/ON		ASI
10-May	50005/06	31121	ASI		NO OPR		ASI		ASI	X	ASI		ASI		NO OPR		NO OPR	X	ASI		ASI		ASI		ASI

11-May	50005/06	31121	ASI		ASI		ASI		ASI		X	ASI		ASI		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI
14-May	50005/06	51632	NO OPR		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	T/S DOWN		>>		>>		>>
15-May	50005/06	51632	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
16-May	50005/06	51632	ASI		ASI		ASI		ASI		X	ASI		ASI		SOLD		C/ON		X	ASI		ASI		ASI		ASI
17-May	50005/06	51098	ASI		ASI		ASI		ASI		X	ASI		ASI		SOLD		REMOVE		X	REMOVED		ASI		ASI		ASI
18-May	50005/06	51228	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		SOLD
19-May	50005/06	51228	ASI		C/ON		ASI		ASI		X																
21-May	50005/06	31615	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		SOLD
22-May	50005/06	31615	C/OFF		OPEN		CLEANING SINK																				
22-May	50005/06	50694							50694		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
23-May	50005/06	50694	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI
24-May	50005/06	50694	ASI SOLD		C/OFF																						
24-May	50005/06	30306					30306 ASI PLUMB				X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
25-May	50005/06	51103										51103		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
26-May	50005/06	30306	ASI		ASI		ASI		ASI		X	ASI NO OPR		NO OPR		NO OPR		NO OPR		X	ASI		ASI		ASI		ASI
26-May	50005/06	30306	GOING C/B AS		ASI		ASI		ASI		X	ASI		ASI		ASI		SPLITTER PROBLEMS ASI					ASI		ASI		ASI
27-May	50005/06	30306	ASI		ASI		ASI		SOLD NEED WI		X	NO OPR		NO OPR		WIRE & FLUSH		C/OFF		X	OPEN		OPEN		NO OPR		NO OPR
29-May	50005/06	51077	FLUSH ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		SOLD		X							
29-May	50005/06	30401																			30401		FLUSHING C/ON		NO OPR		NO OPR
30-May	50005/06	30401	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI NO OPR		NO OPR		NO OPR		NO OPR
31-May	50005/06	30401	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		ASI		X	ASI		ASI		ASI		SOLD C/O
19-May	50005/06	31615									X	31615		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		?		?
23-May	50005/10	52531	GG		GG		GG		GG		X	GG		NO OPR		NO OPR		NO OPR		X	GG		GG		GG		?

19-May	50173/07	OPEN	OPEN		OPEN		OPEN		OPEN		ORDRED SORT										
21-May	50173/07	OPEN			OPEN		OPEN		OPEN		OPEN				OPEN		OPEN		OPEN		OPEN
22-May	50173/07	OPEN	>		>		>		>												
23-May	50173/07	OPEN															OPEN		NO OPR		NO OPR
24-May	50173/07	OPEN																			
25-May	50173/07	OPEN																			
30-May	50173/07	OPEN																			
31-May	50173/07	OPEN																			
5-May	50173/08	C/ON	81000		61000		SOLD		C/OFF		NO OPR		NO OPR		NO OPR		NO OPR		31000		87000		AJ HYSTER		66000
7-May	50173/08	6600 SEG 5 AND LOD																			
8-May	50173/08	50641	COMING ON														66000				
9-May	50173/08	52135	66000						PLAP & SEG TIM		87000		SOLD C/OFF								
9-May	50173/08	32615													32615 C/ON		85000		NO OPR		NO OPR		NO OPR		NO OPR
10-May	50173/08	32615			COMPLETE SOLD																
10-May	50173/08	31491					31491 C/ON		SOLD												
10-May	50173/08	50945																	50945		NO OPR		NO OPR		NO OPR
11-May	50173/08	50945	COMP SOLD												50145						
12-May	50173/08	50417	PG 5		PG 5		PG 5		PG 5		NO OPR		NO OPR		NO OPR		NO OPR		64000		64000		SHUTDOWN 0230		
14 May	50173/08	50417	COMP PG 8		PG 10		PG 11		SOLD COMP		OPEN										
14-May	50173/08	51098															51098		>		>		>		66000
15-May	50173/08	51098	COMP SOLD																		
15-May	50173/08	51207					51207 C/ON		NO OPR		NO OPR		NO OPR		NO OPR		NO OPR		51207 A/C				91000		
16-May	50173/08	51207	PG 10		COMP SOLD																
16-May	50173/08	31656					31656 C/ON		PG 3						NO OPR		OPEN		>		>		>		>
17-May	50173/08	31656	NO OPR PG 5		NO OPR		NO OPR		NO OPR						NO OPR										87000
18-May	50173/08	31656	PG 5		NO OPR		NO OPR		NO OPR								NO OPR								
19-May	50173/08	31656	NO OPR		87000		54000		92000																
21-May	50173/08	31616	NO OPR		NO OPR		NO OPR		NO OPR										NO OPR 95000						85000
22-May	50173/08	31616	PG 3		PG 4		PG 5		PG 5																
23-May	50173/08	30234	C/ON		NO OPR		NO OPR		NO OPR														91000		94000
24-May	50173/08	30234	NO OPR		NO OPR		PG 11		SOLD																
24-May	50173/08	30253															30253 C/ON		C/ON						62000
25-May	50173/08	30253	PG 5 NO OPR		NO OPR																		MEETING		SOLD OPI
29-May	50173/08	50222	C/ON		PG 3		PG 4		5												94000		PG 5B		NO OPR
30-May	50173/08	50222	PG 5		7		7		9										NO OPR						
31-May	50173/08	50222	PG 9		PG 9		REJECT																		
31-May	50173/08	30241							30241 C/ON		NO OPR C/ON		NO OPR C/ON		NO OPR C/ON		NO OPR C/ON								
5-May	50173/09	30253	81000		61000		PLA SOLD		C/OFF		NO OPR		NO OPR		NO OPR		NO OPR		OPEN		NO OPR		NO OPR		NO OPR
7-May	50173/09	32615	6600 FINAL LOGIC																						
8-May	50173/09	50172	66000		TRANS SPOOL																				
9-May	50173/09	50222	80000						PLA VS PLAP		66000		92000		SOLD										
9-May	50173/09	31615													31615 C/ON		83000				SOLD		C/ON		82000
10-May	50173/09	31625		PLA SOLD																					
10-May	50173/09	51012			51012						REJECT														
10-May	50173/09	30690															30690		SOLD C/OFF						
10-May	50173/09	50127																			50127 LEAK CK				
11-May	50173/09	50127					PG 5 PLA		50127																
11-May	50173/09	30255													30255		REJECT PLAP CU		REMOVED REF		C/ON		SOLD 30255		OPEN
12-May	50173/09	30618	PG 4		PG 5		PG 6		>		PLA SOLD		OPEN		>		>		OPEN		NO OPR		SHUTDOWN 0230		
14-May	50173/09	30753	PLA C/ON		PG 1		REJECT																		
14-May	50173/09	30942							30942						PLA						SOLD				
14-May	50173/09	30398																					30398 C/ON		C/ON
15-May	50173/09	30398	BROKEN STUD		PG 4		PG 5		PG 6		>		>		>		>		NO OPR 6600		NO OPR 066		NO OPR		NO OPR
16-May	50173/09	30398	PG 8		SOLD PLA		OPEN		OPEN						NO OPR		OPEN								
17-May	50173/09	31165	PLA PG 3		PG 5		PG 8		SOLD		NO OPR								OPEN						
18-May	50173/09	51012	3		PLA REJECT																				
18-May	50173/09	30165					30165 C/ON										NO OPR								
19-May	50173/09	30165	66000		84000		84000		SOLD REMOVED																
21-May	50173/09	30241	C/ON		PG 2		PG 6		PG 8														PLAP SOLD		OPEN
22-May	50173/09	OPEN	>		>		>		>																
23-May	50173/09	30462	PLA NO OPR		NO OPR		NO OPR		NO OPR												SOLD OPEN				
23-May	50173/09	51012																					51012 PLA		80000
24-May	50173/09	51012	S/L		REJECT		C/ON		C/ON														REJECT		OPEN
25-May	50173/09	50222	C/ON		PG 5		PG 9		SOLD										OPEN						
29-May	50173/09	52020			REJECTED		PLA C/ON																		
29-May	50173/09	52081																	52081		94000		52000		66000
30-May	50173/09	52081	PG 5		NO OPR		NO OPR		NO OPR												SOLD PLAP				
30-May	50173/09	50172																					50172 PLAP C/ON		

31-May	50173/09	50172	C/ON NO OPR				AREA D SORT				C/ON			80000
5-May	50173/10										OPEN	NO OPR	NO OPR	NO OPR
9-May	50173/10	51946	80000			PLAP RESOLVER	82000	81000	66000	66000		SC'D	50146	82000
10-May	50173/10	50146		REJECT										
10-May	50173/10	50118			50118	SOLD								
10 May	50173/10	52188								52188	66000	SOLD C/OFF		
11 May	50173/10	50222			PG 5 COMP	50222								
11-May	50173/10	30708							30708					
12-May	50173/10	30708	PG 3	PG 5	>	PLA SOLD	OPEN	>	>	>	NO OPR	NO OPR	SHUTDOWN 0230	
14-May	50173/10	51012	PG 3	PG 5	>	HOLD FOR 1ST SHIFT			PLA					
14-May	50173/10	50102								50102				66000
15 May	50173/10	51012	TROUBLESHOOTING		REJECT									
15-May	50173/10	30753		30753 C/ON	C/ON	PG 1	>	>	>	>	>	NO OPR	NO OPR	NO OPR
16-May	50173/10	30753	PG 3	REJECT PLA										
16-May	50173/10	51012			51012 PLA C/ON		PG 3		NO OPR		82000			
17-May	50173/10	51012	PG 5	PG 6	REJECT									
17-May	50173/10	31179				31179	SOLD							
17-May	50173/10	50096						50096	PLA	NO OPR				80000
18-May	50173/10	50696	4	5	SOLD									
18-May	50173/10	30234				30234								
19 May	50173/10	OPEN												
21-May	50173/10	30861	PG 4	PG 6	NO OPR	PG 8						SOLD		
21-May	50173/10	31509											31509	80000
22-May	50173/10	31509	PG 5	REJECTED	31509 C/ON	C/ON								
23-May	50173/10	30165	PG 3	PG 5	PG 7	SOLD C/OFF					SOLD C/OFF			SOLD C/
24-May	50173/10	PG 3	AJ PROB	PG 3	PG 4						NO OPR	NO OPR	NO OPR	NO OPR
25-May	50173/10	30861	PG 3	PG 6	PG 10	SOLD					OPEN			
26-May	50173/10	30152	PG 5	PG 7		SOLD								
26-May	50173/10	31165				31165 C/ON								
27-May	50173/10	31168			SOLD									
27-May	50173/10	51526				51526 C/ON								
29-May	50173/10	51526		SOLD	C/ON	REJECT								
29-May	50173/10	50153								50153	C/OFF	C/OFF	C/OFF	C/OFF
30-May	50173/10	30618	C/ON	NOO R	NO OPR	NO OPR							62000	62000
31-May	50173/10	30618	REJECT											
31-May	50173/10	30398		30398	REJECT	C/OFF					REMOVED			
31-May	50173/10	31491										31491 C/ON		66000
5-May	50173/11										OPEN	>	>	>
10-May	50173/11	OPEN		>		>		>		>	OPEN			
11-May	50173/11	30152			PG 9 COMP									
11-May	50173/11	50145							50145					
12-May	50173/11	50145	PG 5	PG 7	PG 10	COMP/SOLD								
12-May	50173/11	30255					30255 C/ON	66000	>	91000	NO OPR 91000			
14-May	50173/11	30255	PG 6	7	PG 10	COMP SOLD	OPEN		COMP					
14-May	50173/11	51663								51663				88000
15-May	50173/11	51663	PG 8	PG 10	SOLD C/OFF									
15-May	50173/11	50694				50694 C/ON	>	>	>	>	A/C	A/C	A/C	66000
16-May	50173/11	50694	PG 10	SOLD COMP										
16-May	50173/11	50118			50118 COMP	PG 3		NO OPR			50118			
17-May	50173/11	50118	PG 9	SOLD COMP										
17-May	50173/11	52188			52188	PG 5	NO OPR							
18-May	50173/11	52188	SOLD											
18-May	50173/11	50927		50927 PG 3	PG 4	PG 5				NO OPR				
19-May	50173/11	OPEN												
21-May	50173/11	51946	PG 4	PG 6	SOLD									
21-May	50173/11	30690				30690 C/ON					COMP			64000
22-May	50173/11	PG 7	PG 8	SOLD										
22-May	50173/11	50691			50691 C/ON									
23-May	50173/11	50641	PG 9	SOLD	OPEN	OPEN								
23-May	50173/11	50096									50096	NO OPR C/OFF		NO OPR
25-May	50173/11	50096 C/ON									NO OPR	NO OPR	NO OPR	NO OPR
25-May	50173/11	50096	C/ON NO OPR											
26-May	50173/11	50096												
27-May	50173/11	50096				SOLD								
29-May	50173/11	30255		PG 4	PG 5	REJECT					NO OPR REJECT C/OFF		C/OFF	C/OFF
30-May	50173/11	30255	C/OFF	NO OPR	NO OPR	NO OPR					REJECT NO OPR SAVE FOR 1ST			
31-May	50173/11	OPEN												
5-May	50173/12										OPEN			

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5-May	50173/13													AREA D SORT								OPEN		>		>		>

061038

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	A	B	C	D	E	F	G
1	50002-ASI		50002-M&I		50002-SAT		50004-GG
2	30		2		12		2
3	8		26		6		14
4	2		102		12		42
5	4		82		18		32
6	2		4		12		6
7	18		72		4		36
8	2		8		12		20
9	4		40		18		32
10	10		2		8		24
11	2		20		6		34
12	8.2		40		6		18
13	50005-ASI		38		8		14
14	38		2		18		44
15	26		42		10		14
16	22		16		12		36
17	30		34		6		26
18	30		2		30		8
19	46		48		22		42
20	8		40		16		42
21	6		38		8		26
22	42		62		6		2
23	42		34		12		10
24	38		50		14		INV = 23.82
25	26		36		14		50005-GG
26	20		68		20		8
27	18		8		10		16
28	12		44		10		
29	24		64		2		PLUMB INV
30	8		28		6		INV =
31	48		4		4		2.923
32	88		38		6		
33	72		28		12		

11.25

	A	B	C	D	E	F	G
34	42		30				
35	48		26				
36	18		28				
37	20		34				
38	34		32				
39	56		6				
40	6		26				
41	32		26				
42	68		4				
43	16		2				
44	36		48				
45	36		32.19				
46	24		50004-M&I				
47	18		8				
48	4		46				
49	12						
50	62		50005-M&I				
51	36		2				
52	20						
53	38						
54	58						
55	18						
56	22						
57	42						
58	2						
59	6						
60	14						
61	40						

30.67

0610690

347-Doors

Part #	ASI	R/S	M&I	R/S	SH	R/S	GG	NO OPR
52434			2		12	sold		
50395			26		6	sold		
30104	30		102		12			22
51045			82		18	Remove		
30666			4		12	sold		
50153					4	Reject		
30353			72		12			4
50927	8	Remove	8					52
30306			40		18			
52322			2					
52224			20		8	sold		
50815					6	Resell		
52353			40		6	sold		
51828			38		8	sold		
51228	2							
30404	4		2					2
51638			42		18			
21836								18
30353						sold		
50927			16					
21836								42
32107			34		10	sold		
51917			2					
31804								44
50440			48					4
51633								8
30144	2		40		12			
51632			38		6	sold		
50145			62		30	sold		
51179					22			
30104	18	Removed	34		16	Resold		

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Part #	ASI	RIS	MI	RIS	SAT	RIS	GG	RIS	NOO
50915			50		8	sold			
50838			36		6	sold			
52061			68		12	Reject			12
50440			8						
30404			44		14				
50153			64		14	Removed			2
51098			28						
51008			4		20	sold			
31615			38		10	sold	2		
31668			28	Reject					
30793			30						32
31444			26		10	sold			
51401	2		28		2	sold			
31029			34		6	sold			16
30258	4								
31911			32		4	sold			
30622			6						
51128	10	sold	26		6				
32229									
51238			4						
20834			2		12				
32136	2		48						24
51901							2		
51103							14	sold	
51828							42	sold	
50945							32	sold	46
51103							6	Reject	6
30169			8				36	sold	32
30662							20	Reject	
30353							32	sold	4
52086							24	sold	36

Part #	ASI	R/S	M&I	R/S	SAT	R/S	GG	R/S	NO OPR
21590							34	sold	4
21532			46				18	sold	
520 61							14	sold	
30843							44		
51098							14	sold	
30618		sold							
51417							36		16
21475		sold							
50945									14
52054							26		10
30662							8	Remove	4
51290							42	sold	22
50696							42	sold	32
52521							26	sold	72
520 61							2		22
31652							10		14
52353	38	sold							
50456	24	sold							
50153	22	sold							18
50440	30	sold							8
51213	30	sold							4
30404	46	sold							4
30144	8	sold							8
30253	6								10
51007	42								18
50927	42	sold							
30104	38	sold							
50118	26	sold	2				8		34
52322	20	sold							
30861	18								
50915	12	sold							

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Part #	A&I	R/S	M&I	R/S	SAT	R/S	GG	R/S	OPR
50838	24								6
30838	8	sold							
30588	48								78
30446	88								22
31542	72	sold							22
50693	42	sold							50
30656	48								52
30618									14
52043		sold							98
50499		sold							16
51933		sold							18
30380		sold							16
51341									16
30258									8
31656									16
30073		sold							10
51999	18	sold							
30104									
51901	20	sold.							
51828	24	sold							12
51638	56	sold							4
30404	6								
51045	32	sold							8
51433	68								18
50145	16	sold.							
51623	36								4
30966	3								20
51103	24	sold							20
30253	18								
50395	4	sold							
5140	12	sold							

Part #	ASI	L/S	M&I	RIS	SAT	RIS	GG	RIS	10 OPR
31029	62	Remove							
31911	36	sold							24
30258	20	sold							
31121	38								10
51632	58	sold							2
51098	18	sold							
51228	28	sold							
31615	22	sold							
50694	42	sold							
30306	2								16
51103									14
30306	6	sold							4
51077	14	sold							
30401	40	sold							8
31615									10
52531							16		6

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	CODE																									
	1	M&I		2	SAT	3	T S DOWN	4	NO OPR	5	SOLD	6	REMOVED													
DATE	TEST STAND	S/N	8:30		10:30		12:30		14:00	X	16:30		18:30		20:30		22:00	X	0:30		2:30		4:30		6:00	
										X								X								
1-May	50002/01	30902	OFF							X								X								
1-May	50002/01	52434			M&I		SAT		SAT	X	SAT		SAT		SAT		SAT	X	SOLD		REMOVED	0				
1-May	50002/01	50395								X								X			C/ON		PLUMB		M&I	
2-May	50002/01	50395	M&I		M&I		M&I		M&I	X	M&I		M&I		M&I		M&I	X	M&I		M&I		M&I		SAT	
3-May	50002/01	50395	SAT		SAT		SOLD		C/OFF	X								X								
3-May	50002/01	30104								X	C/ON		PLUMB		M&I		M&I	RW	X	M&I	RW	M&I	RW	M&I		M&I	
4-May	50002/01	30104	M&I		RW		RW		ASI M	< X	ASI M		ASI M		ASI M		ASI M		X	ASI M		ASI M		ASI M		ASI M	
5-May	50002/01	30104	NO OPR		ASI M		ASI M		ASI M	X	ASI M		ASI M		ASI M		SOLD		X	NO OPR		NO OPR		FLUSH		REMOVE	
6-May	50002/01	30104	M&I		M&I		M&I		M&I	X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
7-May	50002/01	30104	M&I		M&I *		M&I *		M&I	X	M&I *		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
8-May	50002/01	30104	M&I		M&I *		M&I		M&I	X	M&I *		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
9-May	50002/01	30104	M&I		M&I		M&I		M&I	X	M&I		M&I		M&I		M&I		X	M&I		M&I		SAT		SAT	
10-May	50002/01	30104	SAT		SAT		SAT		REG BAD	X	C/OFF		C/ON		M&I		M&I		X	M&I		M&I		C/OFF		OPEN	
11-May	50002/01	51045	M&I		M&I		M&I		M&I	X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
12-May	50002/01	51045	M&I		M&I		M&I		M&I	X	M&I		M&I		M&I		M&I		X	M&I		M&I		SHUT DOWN		SHUT DO	
14-May	50002/01	51045	M&I		M&I		M&I		M&I	X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
15-May	50002/01	51045	M&I		M&I		M&I		M&I	X	M&I		SAT		SAT		SAT		X	SPOT CK		SPOT CK		SPOT CK		M&I	
16-May	50002/01	51045	GG		SAT		SAT		SAT	X	SAT		SAT		SAT		CONTINUE TO		X	REMOVED		RAR		RAR		RAR	
17-May	50002/01	30666	RAR		OPR 066		OPR 066		OPR 066	X	OPR 066		OPR 066		OPR 066		M&I		X	M&I		SAT		SAT		SAT	
18-May	50002/01	30666	SAT		SAT		SAT		SOLD	X																
18-May	50002/01	50153									50153		SAT C/ON		SAT		VERIFYING		X	TROUBLESHOOTING				REJECT			
18-May	50002/01	30353								X									X							30353	
19-May	50002/01	30353	PLUMB		M&I		M&I		M&I	X	M&I		CHANGED M/V		M&I		M&I		X	NO OPR		NO OPR		?		?	
21-May	50002/01	30353	M&I *		M&I *		M&I *		M&I *	X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
22-May	50002/01	30353	M&I		M&I		M&I		M&I	X	M&I *		M&I *		M&I <		M&I <		X	M&I		M&I		M&I		M&I	
23-May	50002/01	30353	M&I		LEAK TEST M&I *				M&I	X	M&I *		M&I *		SAT		SAT		X	SAT		SAT		SAT		SAT	
25-May	50002/01	50927	NO OPR		M&I		M&I		M&I	X	M&I		POSSIBLE DEMATE				DEMATING	ASI	X	NO OPR		NO OPR		NO OPR		NO OPR	
26-May	50002/01	50927	ASI NO OPR		NO OPR		NO OPR		NO OPR	X	NO OPR		NO OPR		NO OPR		NO OPR		X	TROUBLE SHOOT TEMP BIAS				STILL ON ASI		NO OPR	
27-May	50002/01	50927	NO OPR		NO OPR		NO OPR		NO OPR	X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	
29-May	50002/01	50927	ASI REMOVED																							
29-May	50002/01	30306			30306		PLUMB		M&I	X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
30-May	50002/01	30306	M&I		M&I		M&I		M&I	X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		SAT	
31-May	50002/01	30306	SAT		SAT		SAT		SAT	X	SAT		SAT		SAT		SAT		X	FINAL ELECT CHECK							
31-May	50002/01	52322								X									X					52322 C/ON		M&I	
1-May	50002/02	52224	M&I		M&I		M&I		M&I	X	M&I *		M&I		M&I		M&I		X	M&I		*		M&I		SAT	
2-May	50002/02	52224	SAT M		SAT M		SAT M		SOLD	X	OFF								X								
2-May	50002/02	50815								C			C/O		SAT M		SAT M		X	SAT M		RESELL					
3-May	50002/02	52353	PLUMB		M&I		M&I		M&I	X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
4-May	50002/02	52353	M&I		M&I		M&I		M&I	X	M&I *		M&I *		M&I		M&I		X	SAT		SAT		SAT		SOLD	
5-May	50002/02	52353	OPEN		»		»		»	X	»		»						X								
5-May	50002/02	51828								X					51828		FLUSH		X	PLUMB		M&I		M&I		M&I	
6-May	50002/02	51828	M&I		D/N		M&I		M&I	X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I	
7-May	50002/02	51828	M&I		M&I *		M&I *		SAT	X	SAT		SAT		SAT		SOLD		X	C/OFF		OPEN					
7-May	50002/02	51228								X									X					51228		RAR	

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8-May	50002/02	51228	RAR		C/OFF		C/ON		ASI		X																
8-May	50002/02	30404									X	30404		ASI		NO OPR		ASI		X	READY TO MA		MATING		MATING		MSI
9-May	50002/02	51638	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
10-May	50002/02	51638	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		SAT		SAT		SAT
11-May	50002/02	51638	SAT		SAT		SAT		SAT		X	SAT		SAT		C/OFF		OPEN		X	T/S DUE CALIBRATION				»		»
12-May	50002/02	T/S DUE CALIBRATION			»		»		»		X	OPEN		OPEN		OPEN		OPEN		X	OPEN		OPEN		SHUT DOWN		SHUT DO
14-May	50002/02	DUE CALIBRATION			»		»		»		X	T/S DOWN CALIBRATION				T/S WAITING CALIBRATION				X	»		»		»		»
15-May	50002/02	DUE CALIBRATION			»		»		OPEN		X	DUE CALIBRATION				»		»		X	AWAIT CALIBRATION				»		»
16 May	50002/02	DUE CALIBRATION			»		»		»		X	T/S CALIBRATION				»		»		X	»		»		»		»
17-May	50002/02	BEING CALIBRATED			»		»		»		X	T/S BEING CALIBRATED				»		»		X	»		»		»		»
18-May	50002/02	BEING CALIBRATED			»		»				X	T/S BEING CALIBRATED				»		»		X	»		»		»		»
19-May	50002/02	OPEN	OPEN		OPEN		OPEN		T/S BEING CALIBRATED					»		»		»		X	»		»		?		?
21-May	50002/02		NEED RELEASE FROM ON-SIT		»		»		»		X	»		»		»		»		X	C/ON		PLUMB		PLUMB		C/OFF
22-May	50002/02	31836	NO OPR		NO OPR		NO OPR		NO OPR		X	T/S •		T/S •		T/S		T/S		X	T/S DOWN		T/S DOWN		NO OPR		NO OPR
23-May	50002/02	31836	CORRELATION T/S ON		»		»				X	CORRELATION UNIT				E9		E14		X	NO OPR		NO OPR		NO OPR		?
24-May	50002/02	30353	SOLD																								
24-May	50002/02	50927			50927		SENDING TO MACHINE SHOP				X	C/ON M&I		HOOKING UP M&I				M&I		X	M&I		M&I		M&I		M&I
24-May	50002/02	31836	NO OPR		NO OPR		NO OPR		NO OPR		X	CORREL		T/S DOWN		T/B DOWN		CORREL		X	NO OPR		NO OPR		NO OPR		NO OPR
25-May	50002/02	31836	CORRELATION UNIT		»		»		»		X	CORRELATION UNIT				»		CORRELTION COMPLETED			NO OPR				NO OPR		NO OPR
26-May	50002/02	31836	CORREL CONTROL NO OPR		»		»		»		X	NO OPR		NO OPR		CORRELATION UNIT				X	NO OPR C/OFF		»		»		»
27-May	50002/02	31836	C/OFF		NO OPR		NO OPR		C/OFF		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
29-May	50002/02	32107	RAR		RAR		RAR		RAR		X	RAR		RAR		RAR		M&I		X	M&I		M&I		M&I		M&I
30-May	50002/02	32107	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
31-May	50002/02	32107	WIRE & COVE		LEAK TEST		SAT		SAT		X	SAT		SAT		SAT		SOLD		X	FINAL ELECT CHECK						
31-May	50002/02	5,917																							51917 C/ON		M&I
1-May	50002/03	DUE CALIBRATION			»		»		»		X	IN CALIBRAT		»		»		»		X	»		»		»		»
2-May	50002/03	DUE CALIBRATION			>		>		>		X	IN CALIBRATION				>		>		X	>		>		>		>
3-May	50002/03	IN CALIBRATION			»		»		»		X	»		»		»		»		X	»		»		»		»
4-May	50002/03		IN CALIBRATION				»		»		X	»		»		»		»		X	READY TO USE		»		»		»
5-May	50002/03	31804	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		C/ON		C/ON
6-May	50002/03	1804	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
7-May	50002/03	31804	PLUMB		PLUMB		RAR		RAR		X	NO OPR		RAR		RAR		RAR		X	RAR		COMPLETED		C/OFF		OPEN
8-May	50002/03	50440	M&I		REMOVE		WAIT		READY TO MA		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
9-May	50002/03	50440	M&I		M&I		M&I		M&I		X	NO OPR		NO OPR		M&I		M&I		X	M&I		M&I		M&I		M&I
10-May	50002/03	50440	M&I		M&I		M&I		M&I		X	M&I		OPEN		OPEN		OPEN		X	T/S DOWN		»		»		»
11-May	50002/03	51633									X									X	51633 C/ON		RAR		RAR		RAR
12-May	50002/03	51633	RAR		NO OPR		NO OPR		NO OPR		X	NO OPR		RAR		RAR		IDLE CHECK		X	IDLE CHECK		RAR		SHUT DOWN		SHUT DO
14-May	50002/03	30144	ASI		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
15-May	50002/03	30144	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		SAT		SAT		SAT
16-May	50002/03	30144	SAT		SAT		SAT		C/OFF		X																
16-May	50002/03	51632										51632		READY TO MATI		»		M&I		X	MATING		PLUMB		PLUMB		?
17-May	50002/03	51632	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
18-May	50002/03	51632	M&I		M&I		M&I		SAT		X	SAT		SAT		SOLD		CON TO REMOVE			C/OFF						
18-May	50002/03	50145									X									X			50145		C/ON		M&I
19-May	50002/03	50145	M&I		M&I		T/S DN		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		?		?
21-May	50002/03	50145	M&I		M&I		M&I		M&I		X	M&I •		M&I •		M&I		M&I		X	M&I		M&I		M&I		M&I
22-May	50002/03	50145	M&I		M&I		M&I		M&I		X	M&I •		M&I •		M&I		M&I		X	SAT		SAT		SAT		SAT
23-May	50002/03	50145	SAT		SAT		SAT		SAT		X	SAT •		SAT •		M&I MATRIX		MATRIX		X	SAT		SAT		SAT		SAT
24-May	50002/03	50145	SAT GG PORTION ONLY				SOLD		RAR		X																

24-May	50002/03	51179							51179		X	MINI FLUSHI		C/OFF		C/ON		OPER 066		X	OP 66		OP 66		OP 66		OP 66
25-May	50002/03	51179	CORREL & COVER 6 WK TEST				SAT		SAT		X	SAT		SAT		SAT		SAT		X	SAT		SAT		SAT		SAT
26-May	50002/03	51179	SAT		C/OFF																						
26-May	50002/03	30104					30104		M&I		X	M&I		M&I		M&I		M&I		X	BACK TO M&I		M&I		M&I		M&I
27-May	50002/03	30104	M&I		M&I		M&I		M&I		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
29-May	50002/03	30104	M&I		M&I		M&I		M&I		X	SAT		SAT		SAT		SAT		X	SAT		SAT		SAT		ELECT C
30-May	50002/03	30104	SOLD C/OFF		C/OFF		C/OFF		C/OFF		X	C/OFF		C/OFF		RESOLD				X							
30-May	50002/03	51077																51077		X	M&I		M&I		M&I		M&I
31-May	50002/03	51077	M&I		M&I		NO OPR		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
1-May	50002/04	30104	ASI •	0	ASI •	0	ASI •	0	ASI •	0	X	ASI •	0	ASI •	0	ASI	0	ASI	0	X	ASI		REMOVED				
1-May	50002/04	50915																							M&I C/ON		M&I
2-May	50002/04	50915	M&I		M&I •		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
3-May	50002/04	50915	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		SAT
4-May	50002/04	50915	SAT		SAT		SAT		SOLD		X	C/OFF								X							
4-May	50002/04	50838									X			C/ON		PLUMB		M&I		X	M&I		M&I		M&I		M&I
5-May	50002/04	50838	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
6-May	50002/04	50838	SAT		SAT		SAT		SOLD C/OFF		X	C/OFF															
6-May	50002/04	52061									X			52061		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
7-May	50002/04	52061	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I •		X	M&I		M&I		M&I		M&I
8-May	50002/04	52061	RCVV PROBLE		UFC		M&I		M&I •		X	M&I		M&I •		M&I		M&I		X	M&I		M&I		M&I		M&I
9-May	50002/04	52061	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
10-May	50002/04	52061	SAT		RCVV PROBLE		>>		REJECT		X	C/ON		MSI		M&I		SAT		X	SAT		SAT		SAT		SAT
11-May	50002/04	50440	C/OFF		OPEN		TO BE REMATED				X	M&I		M&I		M&I		M&I		X							
11-May	50002/04	30404									X									X	30404		M&I		M&I		M&I
12-May	50002/04	30404	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		SHUT DOWN		SHUT DO
14-May	50002/04	30404	M&I		M&I		M&I		M&I		X	M&I		SAT		SAT		SAT		X	SAT		SAT		SAT		SAT
15-May	50002/04	30404	REMOVED UPC		M&I		M&I		M&I																		
15-May	50002/04	50153							50153		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
16-May	50002/04	50153	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
17-May	50002/04	50153	M&I		M&I		M&I		M&I		X	M&I		SAT		SAT		SAT		X	SAT		SAT		SAT		SAT
18-May	50002/04	50153	RECHECK		CHECKING		REMOVED		M&I		X	M&I		M&I		M&I		NO OPR		X	M&I		PLUMB		M&I		M&I
19-May	50002/04	51098	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		?		?
21-May	50002/04	51098	M&I		M&I		M&I		M&I		X																
21-May	50002/04	51008							51008		X	M&I		M&I •		SAT		SAT		X	SAT		SAT		SAT		SAT
22-May	50002/04	51098	SAT		SAT		SAT		SAT		X	FINAL ELECT		SOLD													
22-May	50002/04	31615														31615 C/ON		GG		X	PLUMB		M&I		M&I		M&I
23-May	50002/04	31615	M&I		M&I •		M&I		M&I		X	M&I •		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
24-May	50002/04	31615	DROPPED BEARING				M&I		M&I		X	M&I		SAT		SAT		SAT		X	SAT		SAT		SOLD		C/OFF
25-May	50002/04	31615	RERUNNING SPLITTER		SOLD																						
25-May	50002/04	31668					31668		M&I		X	M&I		M&I		M&I		M&I		X	31668		M&I		M&I		M&I
26-May	50002/04	31668	M&I		M&I		M&I		M&I		X	TROUBLESHOOTING M&I				M&I		REJECTED		X	REMOVED		RAR		C/ON		RAR
27-May	50002/04	30793	NO OPR RAR		NO OPR		NO OPR		NO OPR RAR		X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR
29-May	50002/04	30793	RAR		RAR		RAR COMPLET		OPR 066		X	OP 066		OP 066		CORREL OP 0		M&I		X	M&I		M&I		NO OPR		NO OPR
30-May	50002/04	30793	OPR 066		OPR 066		OPR 066		RCVV OP		X	OP 66		OP 66		OP 66		OP 66		X	OP 66		OP 66		NO OPR		NO OPR
31-May	50002/04	30793	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I		X	M&I		M&I		M&I		M&I
1-May	50002/05	31444	M&I	0	M&I	0	M&I	0	M&I	0	X	M&I •	0	M&I	0	M&I	0	M&I	0	X	M&I	0	M&I	0	M&I	0	M&I
2-May	50002/05	31444	M&I		SAT		SAT		SAT		X	SAT		SAT		SOLD		C/OFF		X	OFF						
2-May	50002/05	51401									X									X			C/O		PLUMBED		M&I
3-May	50002/05	51401	M&I		M&I		T/S •		T/S •		X	T/S •		T/S •		T/S •		M&I		X	M&I		M&I		M&I		M&I

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
[redacted]	24-May	50005/06	50153	GG	NO OPR		GG		GG			X	NO OPR		NO OPR		NO OPR		OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR	
[redacted]	24-May	50005/07	31668	GG	NO OPR		GG		GG			X	NO OPR		NO OPR		NO OPR		NO OPR		X	SOLD C/OFF		OPEN		>		>	
[redacted]	24-May	50005/08	51633	GG	NO OPR		GG		GG			X	GG		GG		REJECT	C/OF	OPEN		X	NO OPR		NO OPR		NO OPR		NO OPR	
[redacted]	24-May	50005/09	30601	GG	B/S	NO OPR			GG			X	NO OPR		NO OPR		NO OPR		NO OPR		X	NO OPR		NO OPR		NO OPR		NO OPR	B/S
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AREA D/ASI/M&I/SAT/GG

	A	B	C	D	E	F	G
1	50002-ASI		50002-M&I		50002-SAT		50005 GG
2	16		36		8		2
3	10		24		12		2
4	32		6		14		
5	44		16		12		
6	4		28		2		
7	8		28		12		
8	6		24		12		
9	64		54		8		
10	10		18		10		
11	78		28		22		
12	54		12		6		
13	8		24		10		
14	~~302~~		18		2		
15	2		16		16		
16	28		12		2		
17	98		2		16		
18	32		30		12		
19	96		18		8		
20	72		14		12		
21	68		20		6		
22	6		26		8		
23	54		16		14		
24	16		68		8		
25	44		62		16		
26	106		36		16		
27	4		56		8		
28	166		20		10		
29	36		6		12		
30			26		8		
31	~~52.29~~		12		10		
32	43.0K		2		6		
33			28		8		

AREA D/ASI/M&I/SAT/GG

	A	B	C	D	E	F	G
34			62		2		
35			16		10		
36			32		10		
37			30		20		
38			36		8		
39			52		14		
40			28		22		
41			40		6		
42			54		12		
43			22		24		
44			42		12		
45			72		10		
46			2		14		
47			2		2		
48			88		10		
49			26		6		
50			10		10		
51			42				
52			62		18.57		
53			8				
54			24				
55			32				
56			34				
57			30				
58			46				
59	PLUMBING:		54				
60	MG: 3.19		16				

29.63

I30T30

Area D Sort

Part #	ASI	R/S	MI	R/S	SAT	R/S	GG	R/S	noOR	
30662			36		8					
30419			24						12	
52086			6							
50153	16		16						18	
52286	10								14	
32309			28		12					
31091			28		14				8	
52188	32		24		12				16	
32268					2	sold				
30966			54		12	sold			10	
51238	44								18	
52208			18		12	sold				
30417	4								4	
31971									32	
51901			28		8					
30419			12						24	Reject
52274	8								14	
31780					10	sold			20	
51590	6		24	Reject					10	
30380	64		18		22	sold			54	
31996			16		6	sold			26	
31978			12		10	sold			4	
51768					2					
52086									68	
32205	10								8	
31715			2		16	sold				
32581					2				6	
51813									18	
30535			30		16	sold			26	
30252									8	Reject

Quad Sort

Part #	ASI	R/S	M&I	R/S	SAT	R/S	GG	R/S	NO OPR	
31355			18	Reject					32	
30130									8	
30703			14		12	sold			6	
51271									48	
32205					8	sold				
51007									14	
30843									10	Reject
31689			20		12	sold				
31972									20	
30396			26		6	sold			16	
31849			16		8	sold			8	
30690	78								58	
31656	54	Reject	68						22	
51010	8								14	
32945		24			14	sold			6	
51007			62		8	sold				
52061			36						180	
52006	302		56		16	sold				
50118			20							
51112			6		16	sold				
51999			24		8	sold				
52554	2		12						8	
50456			2		10	sold				
52554			28		12	sold				
30977									16	
30527	28		62		8	sold			8	
51663	98		16							
31488			32		10	sold	2		8	
50456			30							
50625	32		36		6	sold			24	

Area D Sort

Part #	ASI	R/S	M & I	R/S	SAT	R/S	GG	R/S	NO OPR
50222	96	Reject						30	
31303			52		8	sold		24	
30684			28		2			6	
30818			40		10				
51207	72	Reject						24	
52054			54		10	sold			
31121			22		20	sold			
32211			42	Reject				14	
31291			72		8	Sold		24	
30169			2					4	
30662			2					6	
52010								32	
30885	68	Reject						22	
32610	6							12	
32615	54		88		14	sold			
32268					22			4	
32059			26		6	sold		26	
52054			10					6	Reject
31665	16		42		12				
50641	44							26	
52135	106		62		24	sold		38	
30684			8					4	
31997			24					22	
30073								4	sold
50871									sold
51632									sold
51128								4	sold
30253									sold
31615									sold
52043								14	Rejected - then sold
50925									Reject

Area D Soft

Part #	AST	RIS	MI	RIS	SAT	RIS	GG	RIS	NOOPR
30684					12	sold			
50002 31638			32				2		4
32577					10	sold			
31054			34		14	sold			
52531					2				40
51917	4								32
52463	166		30		10	sold			74
50871	36		46		6	sold			6
51228			54		10	sold			
30684									6
30818			16						8
50002									

Quad Sort

Part #	ASI	RIS	MI	RIS	SAT	RIS	GG	RIS	NDPR	Comments
30462										Reject - Removed
31911										Sold
52081									8	Reject
50481										sold - Removed
30144									8	Sold
52135										sold
32615									8	sold
31491										sold
50145									6	sold
50417									8	sold
51098										sold
51207									8	sold
31626									12	
31616									2	
30234									10	
30253									10	sold
50222									4	sold
31615									4	Reject - sold
51012										sold
30690										sold
30255										Reject - Removed - Sold
30618									2	Sold
30723										Reject
30942										sold
30398									10	sold
31165									2	sold
51012										Reject
30165									2	Sold
30241										sold
30462									8	Sold

Area 5 soy

Part #	AST	R/S	M&I	R/S	SAT	R/S	GG	R/S	Comment
(51012)								NO OPP	~~NO OPP~~ Reject
50222								↓	sold
52020									Reject
52081								6	sold
51946									sold - Reject
50118									sold
52188									sold
30708								4	sold
51012								6	Reject
30753									Reject
31179									sold
30861								2	sold
31209									Reject
30165									sold
30861									sold
30152									sold
31168									sold
51526									sold Reject
30618								6	Reject
30255									sold
51663									sold
50694									sold
50118									sold
52188									sold
50927								2	
51946									sold
50641								4	sold
50096								12	sold
30255								8	Reject

7.0

SUPPORT

ENGINEERING NOTES

EMPLOYEE RANDY HARRIS DATE 7/23/90 - 7/27/90 PAGE NO. 1

RCC MATRFA SUBJECT MIC - SPARE PARTS INVENTORY

MIC - SPARE PARTS INVENTORY

THE MIC SECTION OF THE UFC PRODUCTION AREA IS RESPONSIBLE FOR MAINTAINING SPARE PARTS FOR UFC COMPONENTS. THE STOCK ALLOCATION FOR EACH PART IS DETERMINED ACCORDING TO THE HISTORICAL PERCENTAGE USAGE OF THE PART. THUS, THE MONTHLY AND QTRLY REQUIREMENTS OF UFCs HELP DETERMINE WHAT THE REQUIREMENT WILL BE FOR THE SPARE PART. THE STORES LEVEL WILL THEN BE CALCULATED BASED UPON WHAT STOCK AMOUNT IS NECESSARY FOR A 15-DAY INTERVAL. THE DS WAREHOUSE STOCKS A 30-DAY LEVEL. WHEN THE 15 DAY QUANTITY DROPS TO HALF OF ITS LEVEL, THEN A REORDER QUANTITY IS ISSUED. A CONSTRAINT WHICH EXISTS FOR THE SPARE PARTS IS THE COST ASSOCIATED WITH THE SPARES. APPARENTLY MM HAS A FIXED BUDGET FOR SPARES AND WILL ONLY ORDER HALF OF THE REQUESTED QUANTITY WHICH COULD IN SOME CASES EVENTUALLY LEAD TO A STOCK-OUT. EACH WEEK A REPORT WILL BE GENERATED BY SCHEDULING WHICH LISTS THE CRITICAL ITEMS WHICH ARE IN STOCK-OUT STATUS AND HAVE COVERED OR MIGHT CAUSE A PART TO GO AWP OR REQUIRE A LEGAL ROB-BACK. OVER THE PAST YEAR, THE RANGE OF UFCs HAVING TO GO AWP HAS RANGED FROM A LOW OF TO A HIGH OF , THEREFORE, AN INVENTORY REORDERING/EXPEDITING STUDY MIGHT BE APPROPRIATE TO HELP ALLEVIATE THE PARTS SHORTAGE SITUATION.

WE ARE CURRENTLY EXPERIMENTING WITH AN EOQ INVENTORY MODEL EXPANDED FOR THE RANDOM DEMAND OF THE SPARE PARTS TO DETERMINE IF IT WILL BE FEASIBLE FOR THE CURRENT PROBLEM. IF NECESSARY, THE MONETARY RESTRAINT FOR SPARE PARTS ORDERING CAN BE BUILT INTO THE MODEL. AN EXAMINATION OF MM'S ROLE IN THE PROCESS AND A STUDY OF (1) WHAT WAREHOUSES COULD POSSIBLY BE MODIFIED, AND (2) HOW MIC CAN WORK WITHIN THE RESTRAINTS IF AN OPTIMAL R AND Q CANNOT BE OBTAINED. IF STOCK-OUTS CAN BE DECREASED OR DELAYS ELIMINATED, THE PRODUCTION SITUATION COULD BE ENHANCED TREMENDOUSLY.

DDB SECTION CODE 7.0 DDB PAGE NO. ___

07:0051

From: DSSDLT (Capt Nadeau 5-6580) 27 Jul 90

Subject: UFC Time in Warehouse

To: MD IPI Team

1. We have prepared the information that you requested and hope you find it useful in your efforts. Due to the nature of the underlying data I have only limited confidence in the accuracy of the incoming numbers but am quite confident of the outgoing. The reason for this is that that none of our systems here track incoming reparable assets by serial number. Since UFCs are produced in a regular cycle, specifically Monday turn-ins are usually very large because they reflect weekend production, it is fairly easy to track this "bubble" and get reasonable outgoing information. Unfortunately, the pattern of incoming UFCs enjoys no such regularity. The best we can do, therefore, is assume that the first ones in are the first out to the shop. I have my doubts as to the validity of this assumption but it allows us to make some estimate of the time they spend in the warehouse.

2. For F-16 UFCs, the range of incoming days went from 2 to 31 days with a mean of 7.5 and a std dev of 7.1. For the F-15 UFC the range extended from 2 to 22 days with a mean of 6.9 and std dev of 5.4. Outgoing, the range for both types of UFC was 1 to 3 days with a mean of 1.4.

3. I wish I could provide numbers to you with a higher confidence factor but, as we are all learning, the systems we live with here in the ALC are often not designed for the type of analysis you folks are doing. I hope that your team can highlight the problem and it will become a concern to those with the power to change these data collection systems. My personal guess is that we will become much more concerned with such factors as operational inventory and operational costs here in the very near future and we're going to need this kind of data to manage. If we can be of any further assistance, please call.

Paul F. Nadeau

Paul F. Nadeau, Cpt., USAF
Chief, Technical Laison Unit